CALIFORNIA HIGH-SPEED TRAIN

Conceptual Engineering Plans

In-Progress Draft
Not for Construction

Los Angeles To San Diego

Subsection 3 - Murrieta/Temecula (M/T) to San Diego

March 3, 2011

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CALIFORNIA High-Speed Rail Authority

U.S. Department of Transportation
Federal Railroad Administration

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SYMBOLS

- ALTERNATE ALIGNMENT
- CITY/COUNTY BOUNDARIES
- ALONG CENTERLINE
- EXISTING GRADE
- MATCHLINE
- EXISTING TRANSIT
- PROPOSED TRANSIT
- EXISTING PROJECT
- PROPOSED PROJECT
- STATION
- TUNNEL PORTAL

ABBREVIATIONS

APPROX	APPROXIMATE
AVE/AV	AVENUE
BLVD	BOULEVARD
BNSF	BURLINGTON NORTHERN SANTA FE RAILWAY
℄,CL	CENTER LINE
CLR	CLEARANCE
C.S.	POINT OF CHANGE FROM CIRCULAR CURVE TO SPIRAL
DIA	DIAMETER
E.	EAST
EXIST	EXISTING
Ea	ACTUAL SUPERELEVATION
EB	EASTBOUND
ELEV	ELEVATION
EQNAH	EQUATION AHEAD
EQNBK	EQUATION BACK
Eu	UNBALANCED SUPERELEVATION
EXPY	EXPRESSWAY
FG	FINISHED GRADE
FWY	FREEWAY
HSR	HIGH-SPEED RAIL
HWY	HIGHWAY
I	INTERSTATE
L	LENGTH OF VERTICAL CURVE
Lc	LENGTH OF HORZONTAL CURVE
Ls	LENGTH OF SPIRAL
LA	LOS ANGELES
LAUS	LOS ANGELES UNION STATION
LN	LANE
LOSSAN	LOS ANGELES SAN DIEGO RAIL CORRIDOR AUTHORITY
MAX	MAXIMUM
METROLINK	SOUTHERN CALIFORNIA REGIONAL RAIL AUTHORITY
MIN	MINIMUM
MPH	MILES PER HOUR
MT-1	CALTRAIN MAINLINE TRACK
MT-2	CALTRAIN MAINLINE TRACK
N.	NORTH
NB	NORTHBOUND
OCS	OVERHEAD CONTACT SYSTEM
OG	ORIGINAL GROUND
PED	PEDESTRIAN
PKWY	PARKWAY
P.O.B.	POINT OF BEGINNING
P.O.E.	POINT OF END
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RD	ROAD
ROW, R/W	RIGHT OF WAY
S.	SOUTH
SANBAG	SAN BERNARDINO ASSOCIATION OF GOVERNMENTS
SB	SOUTHBOUND
S.C.	POINT OF CHANGE FROM SPIRAL TO CIRCULAR CURVE
SDIA	SAN DIEGO INTERNATIONAL AIRPORT
SR	STATE ROUTE
ST	STREET
S.T.	POINT OF CHANGE FROM SPIRAL TO TANGENT
STA.	STATION
TO	TURNOUT
T.S.	POINT OF CHANGE FROM TANGENT TO SPRIAL
TYP	TYPICAL
UPRR	UNION PACIFIC RAILROAD
UTC	UNIVERSITY TOWNE CENTER
UTIL	UTILITIES
V	VELOCITY
W.	WEST
WB	WESTBOUND
WY	WAY
XING	CROSSING

GENERAL NOTES

1. ALL WORK, INCLUDING DESIGN WORK, SHALL CONFORM TO THE REQUIREMENTS OF THE HIGH SPEED RAIL AUTHORITY (FOR HIGHSPEED TRAIN FACILITIES) AND CALTRAIN DESIGN CRITERIA (FOR CALTRAIN FACILITIES).
2. TOPOGRAPHIC BASE MAPPING DATED APRIL 2008 WAS PROVIDED BY THE PCJPB. THE HORIZONTAL DATUM IS NAD83 AND THE VERTICAL DATUM IS NAVD88.
3. THE PROFILE CORRESPONDS TO THE ELEVATION AT THE TOP OF RAIL. THE LENGTHS OF LINES ARE BASED ON THE CENTER OF TRACK ALIGNMENT. UNLESS SEPARATE TRACK PROFILES ARE GIVEN, TRACKS PARALLEL TO THE DESIGNATED TRACK AT THE SAME TOP OF RAIL ELEVATIONS PROJECTED ON EITHER PERPENDICULAR OR RADIAL LINES FROM THE DESIGNATED TRACK CENTERLINES.
4. VERTICAL CLEARANCE VALUES ARE CALCULATED FROM THE BOTTOM OF THE HST GUIDEWAY TO THE TOP OF THE FACILITY BELOW, ASSUMING AN HST STRUCTURE DEPTH OF TEN FEET.

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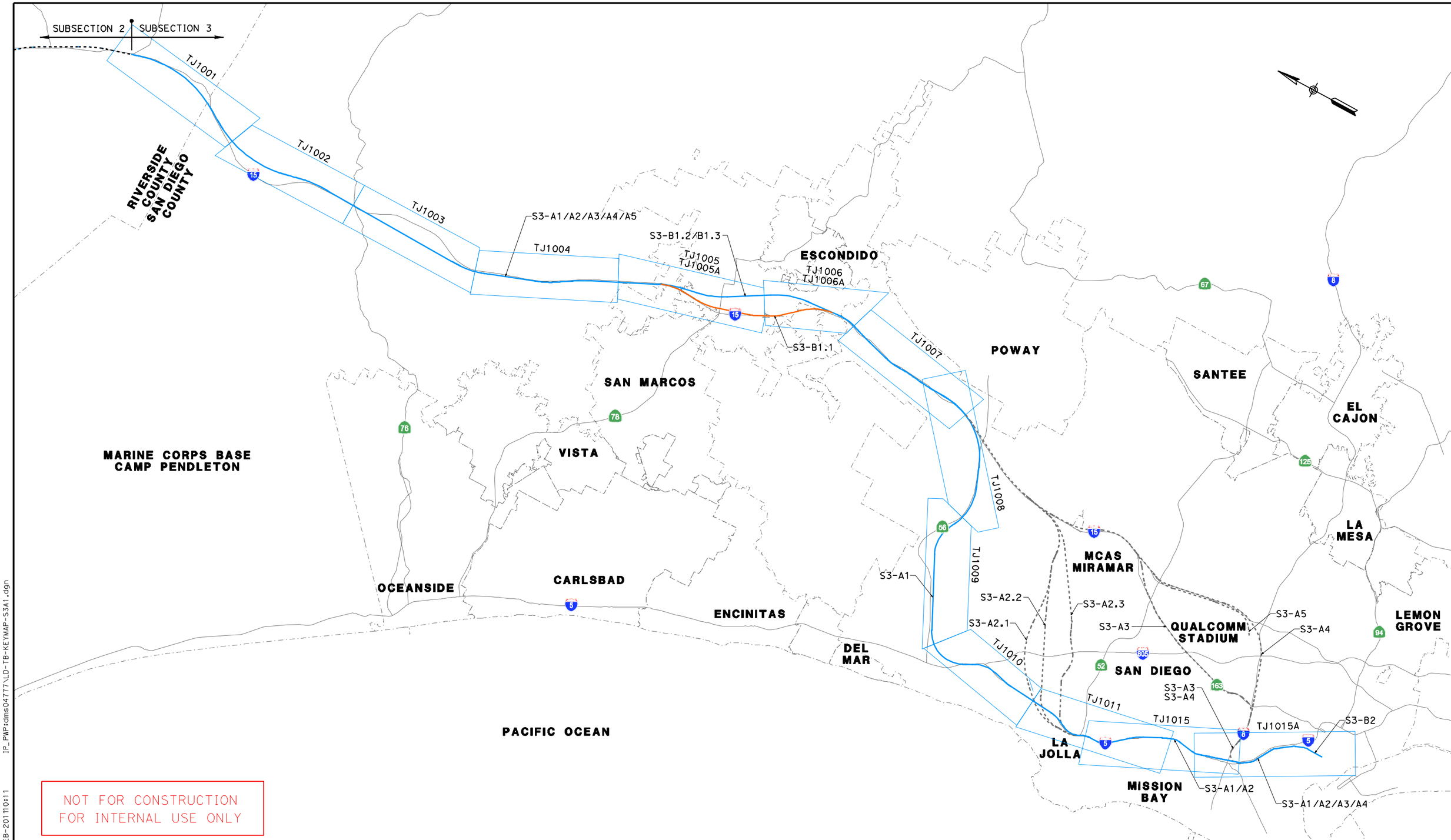

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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

HNTB 401 B Street Suite 302 San Diego, CA 92101
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
Key Map 1

CONTRACT NO.
DRAWING NO. B3001
SCALE None
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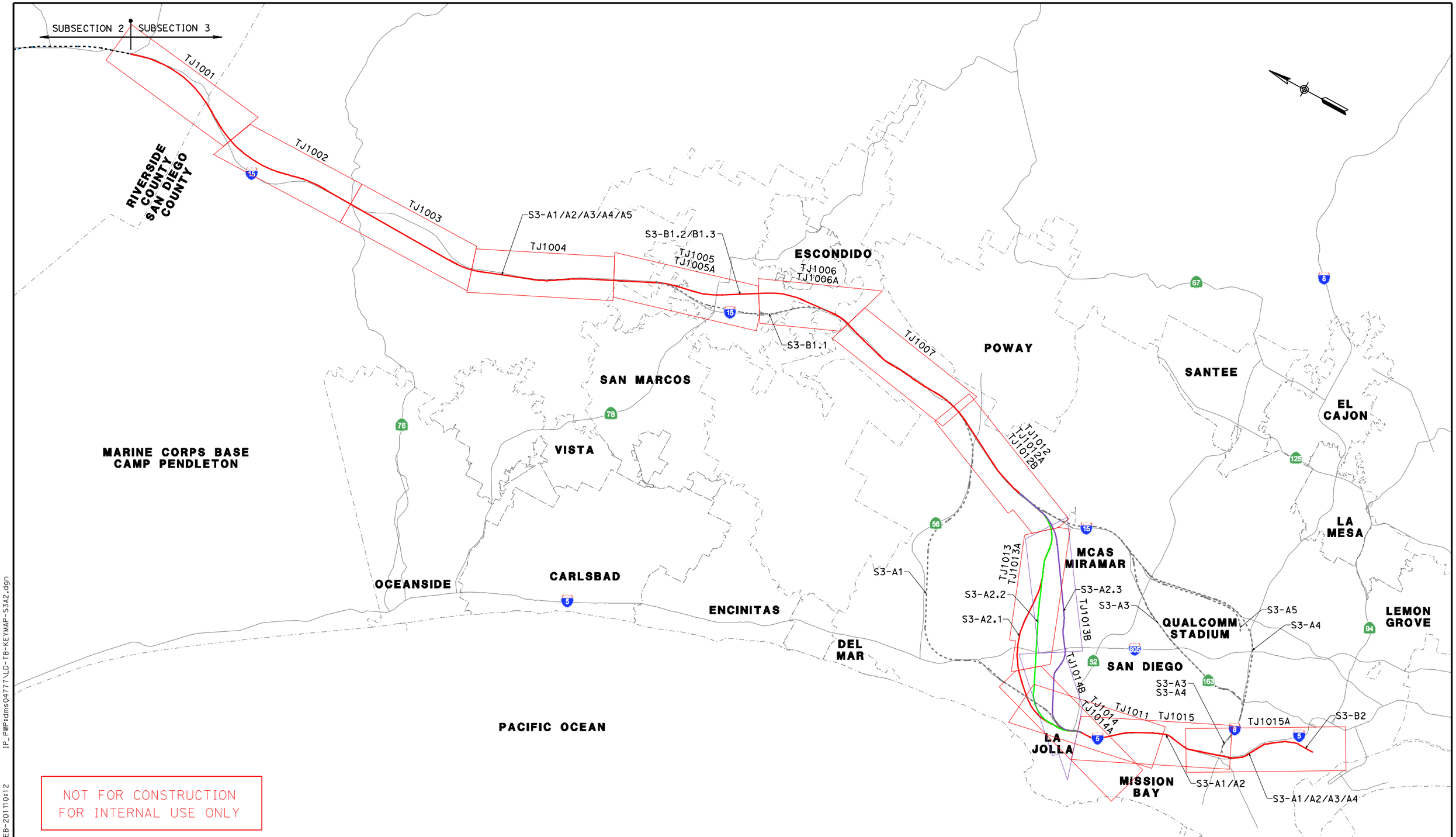

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LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
Key Map 2

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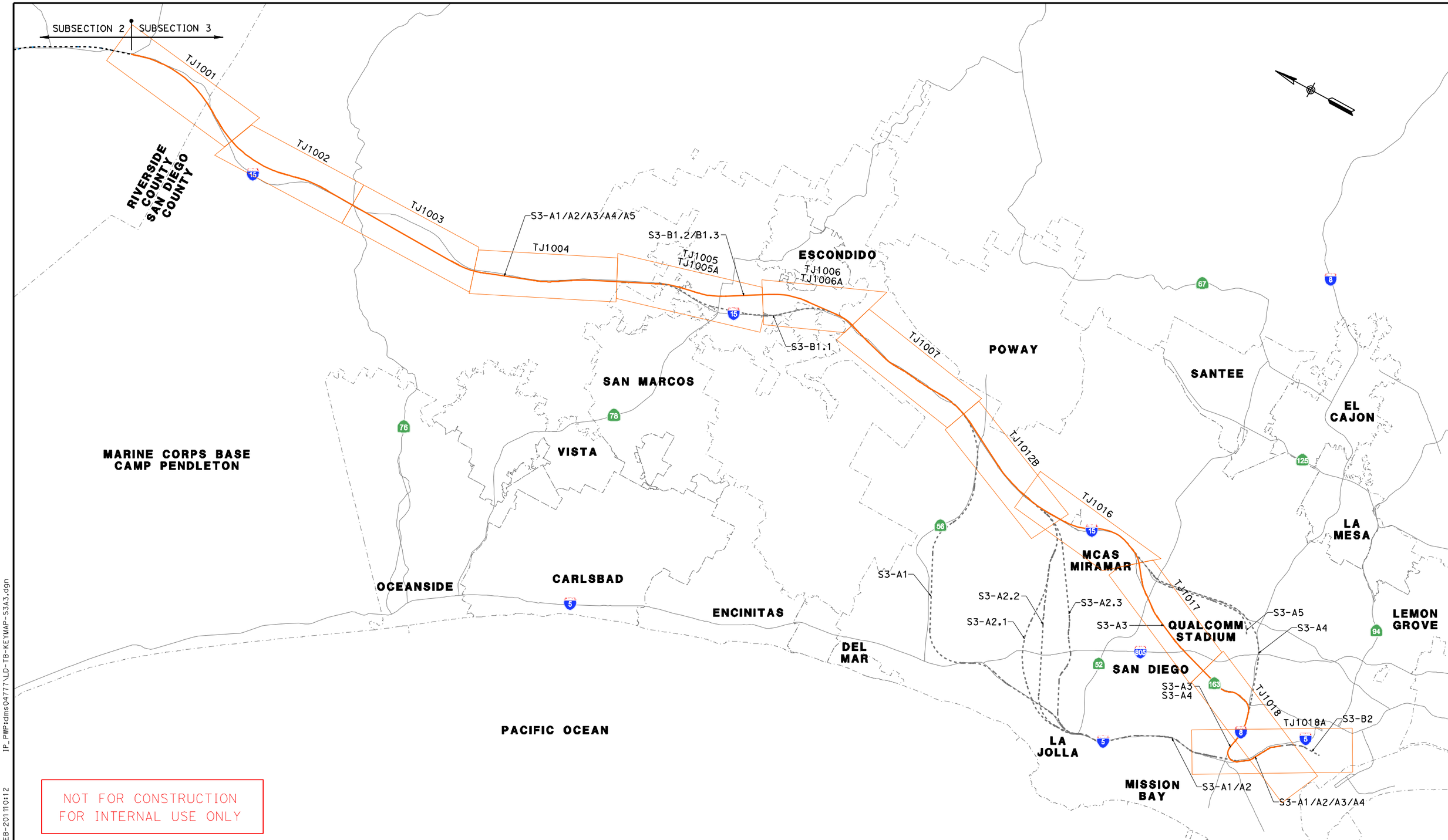

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Subsection 3-Murrieta/Temecula to San Diego
Key Map 3

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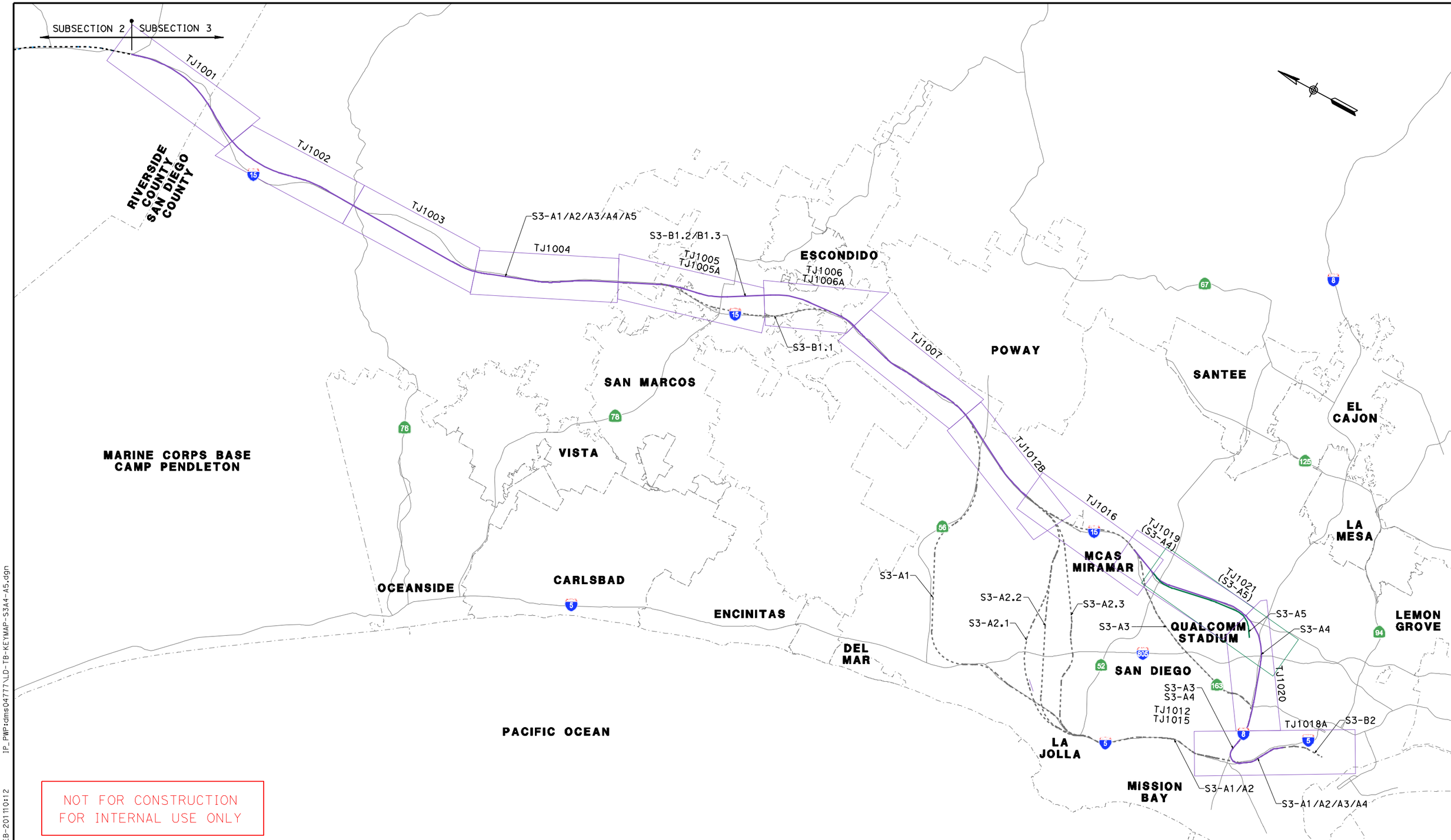

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Subsection 3-Murrieta/Temecula to San Diego
Key Map 4

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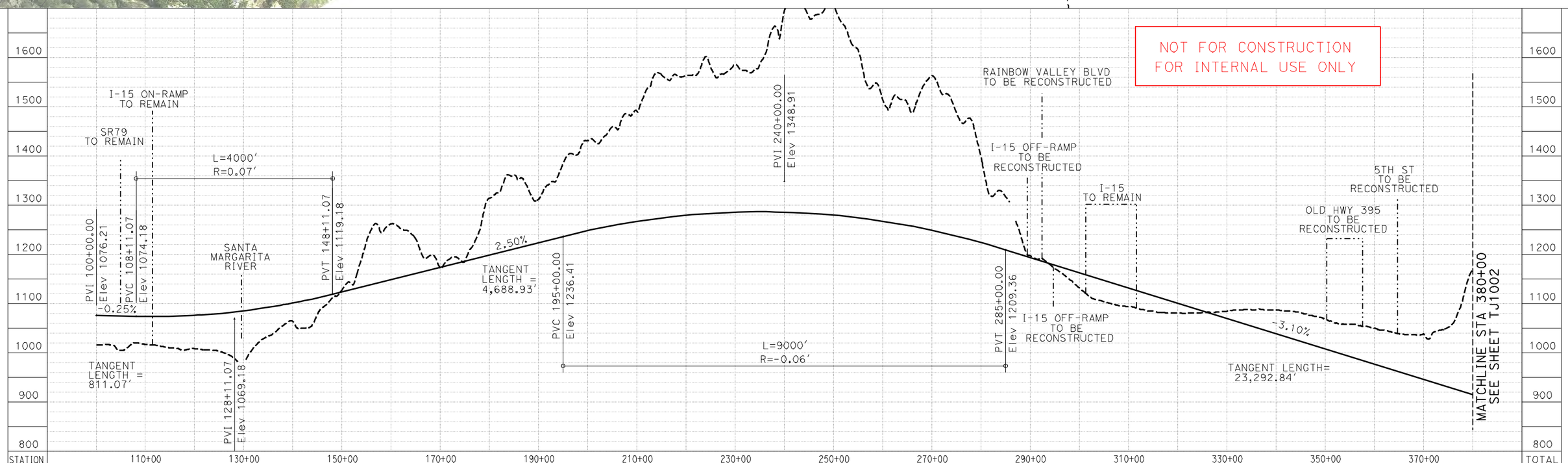

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LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2/A3/A4/A5: M/T to SDIA
Plan and Profile

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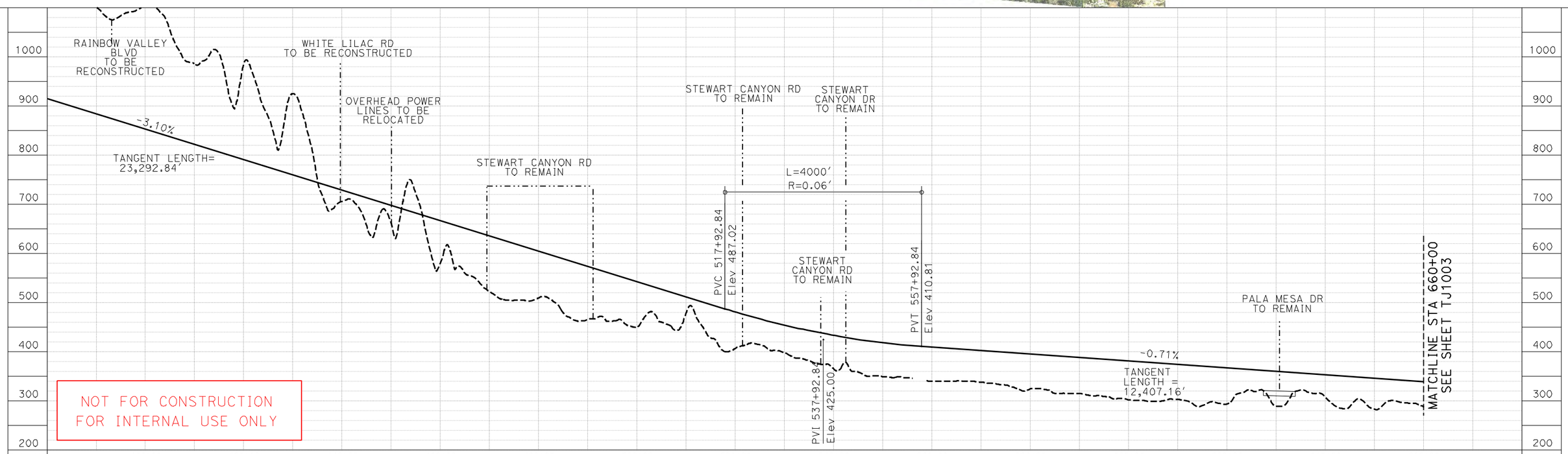

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S3-A1/A2/A3/A4/A5: M/T to SDIA
Plan and Profile

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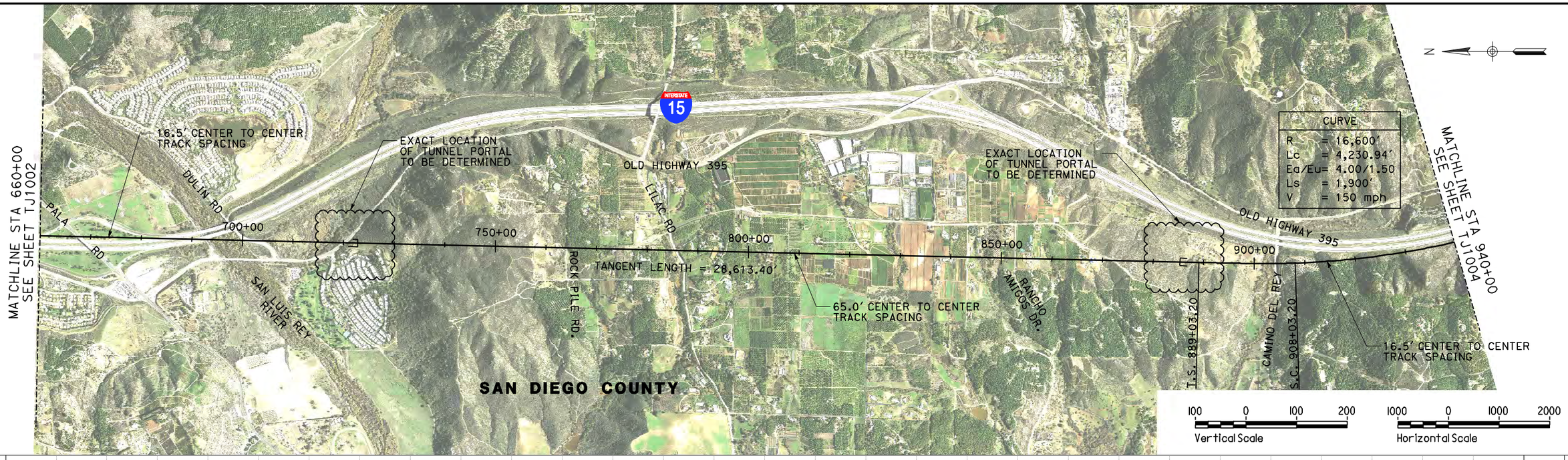

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S3-A1/A2/A3/A4/A5: M/T to SDIA
Plan and Profile

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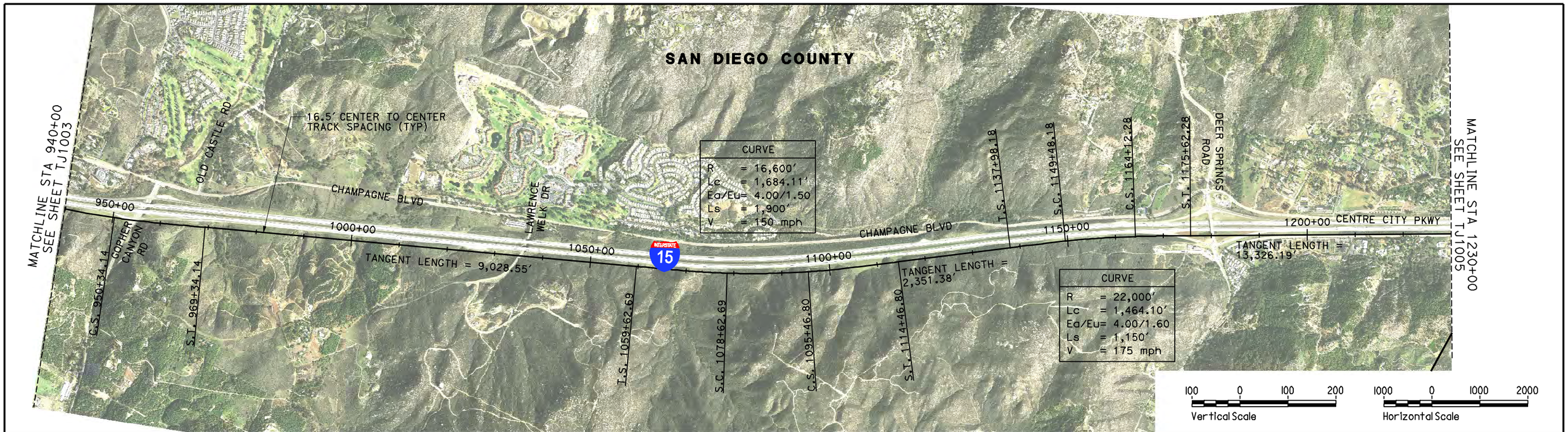

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S3-A1/A2/A3/A4/A5: M/T to SDIA
Plan and Profile

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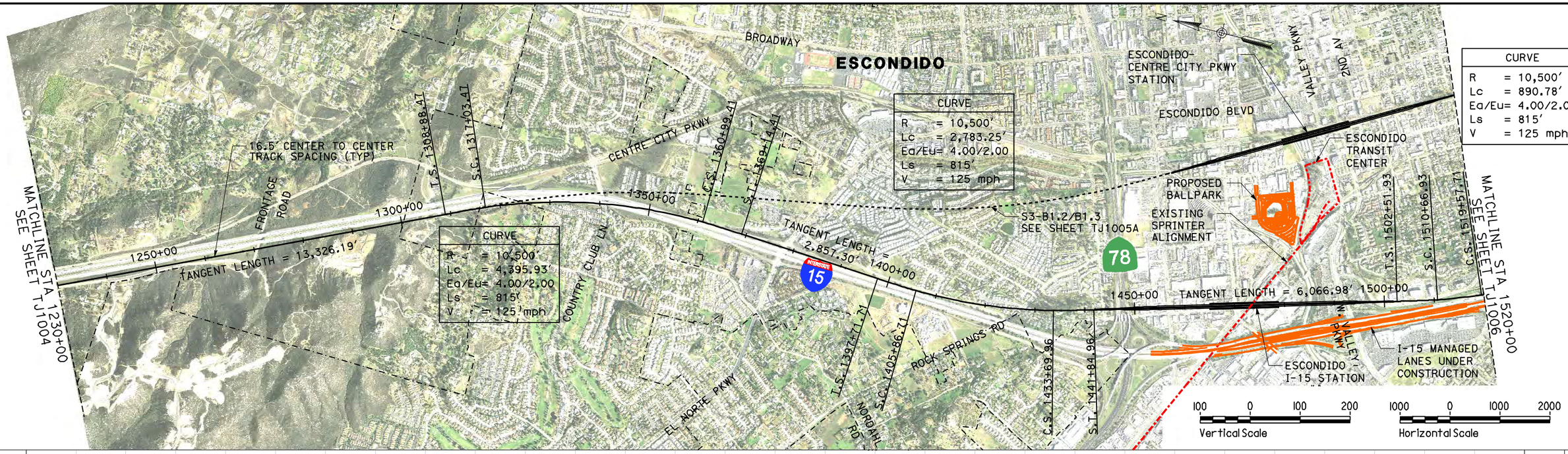

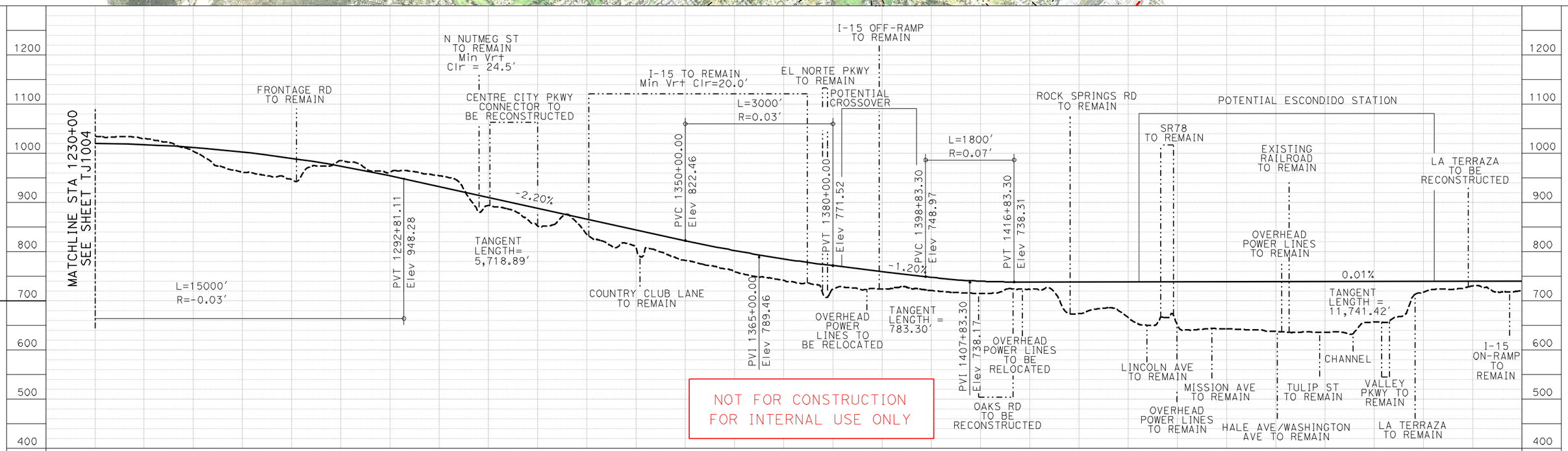

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Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2/A3/A4/A5/B1.1: Escondido I-15
Plan and Profile

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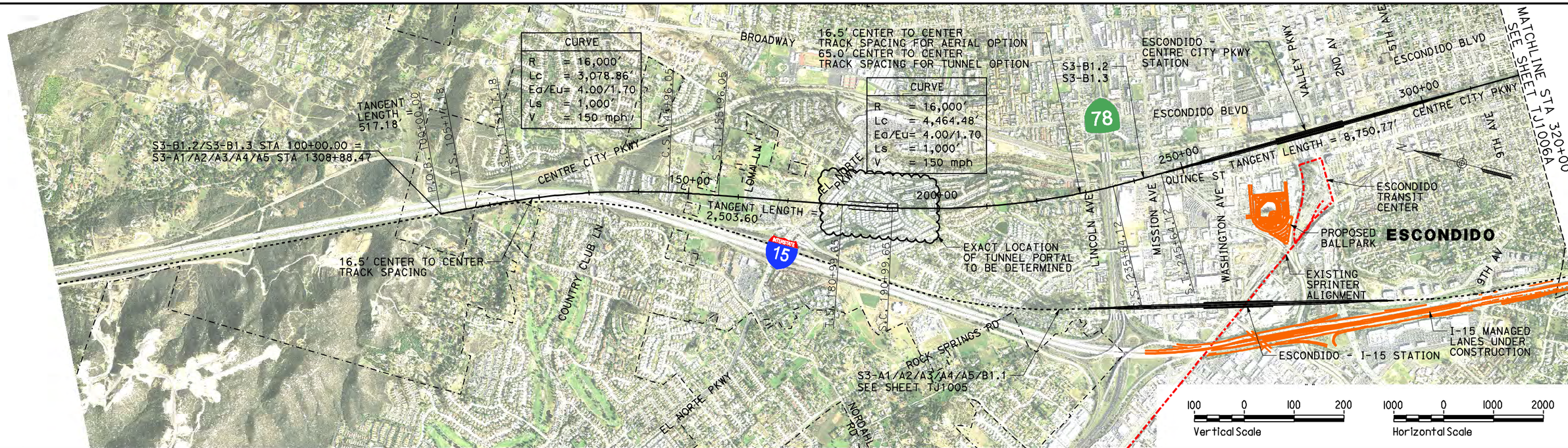

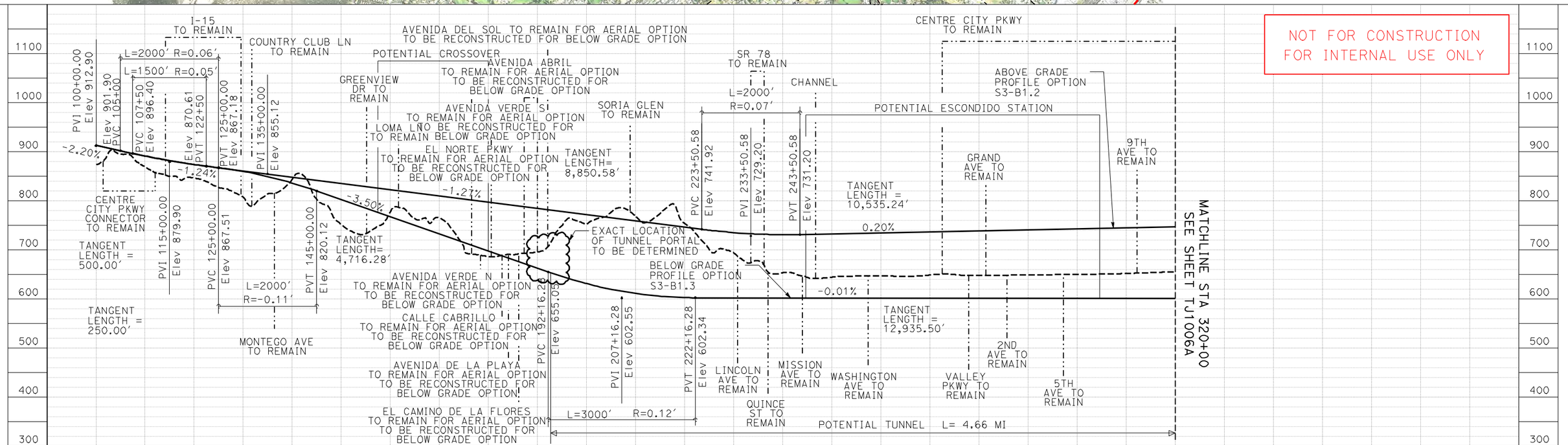

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LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-B1.2/B1.3: Escondido Centre City Pkwy
Plan and Profile

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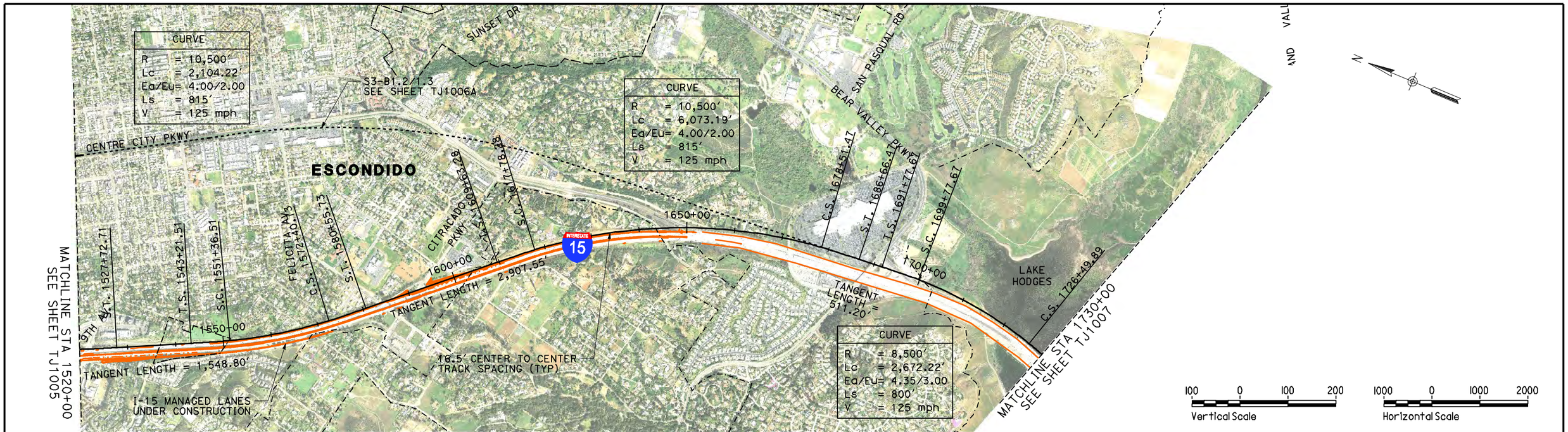

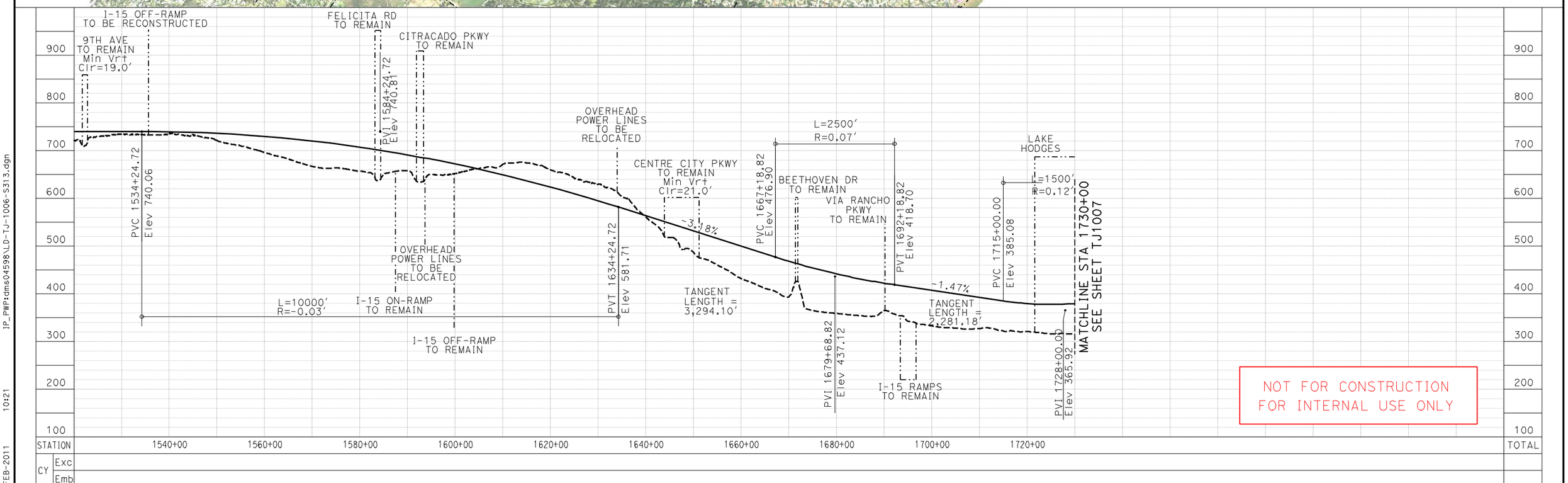

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LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2/A3/A4/A5/B1.1: Escondido I-15
Plan and Profile

CONTRACT NO.
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SHEET NO. 13

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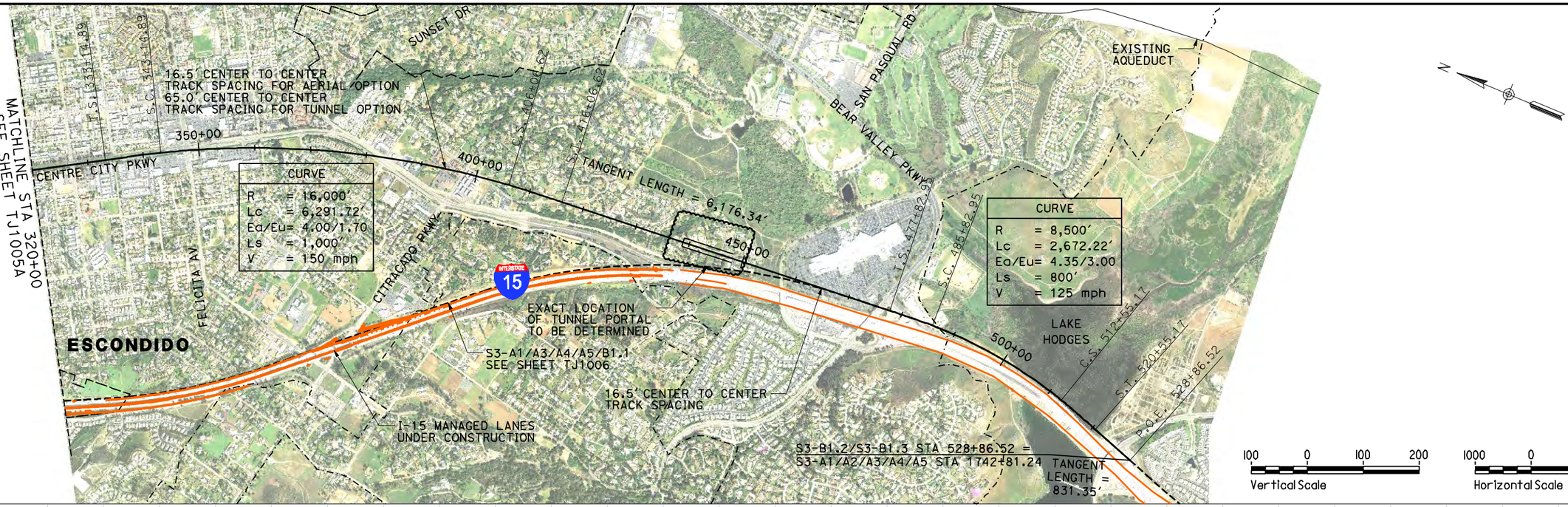

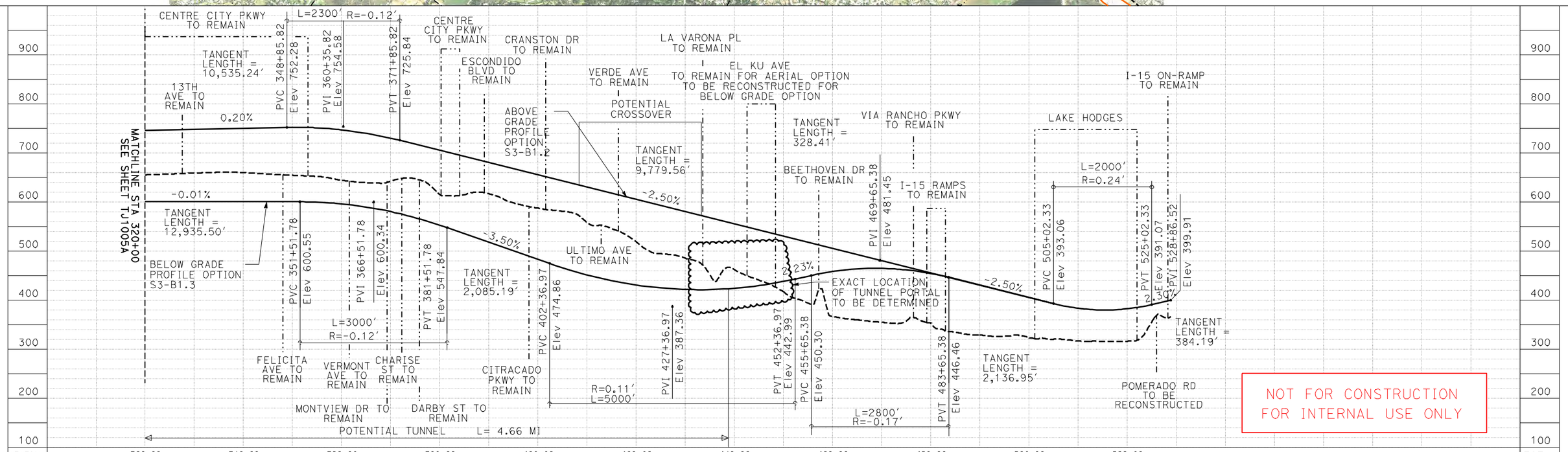

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REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. Weber
DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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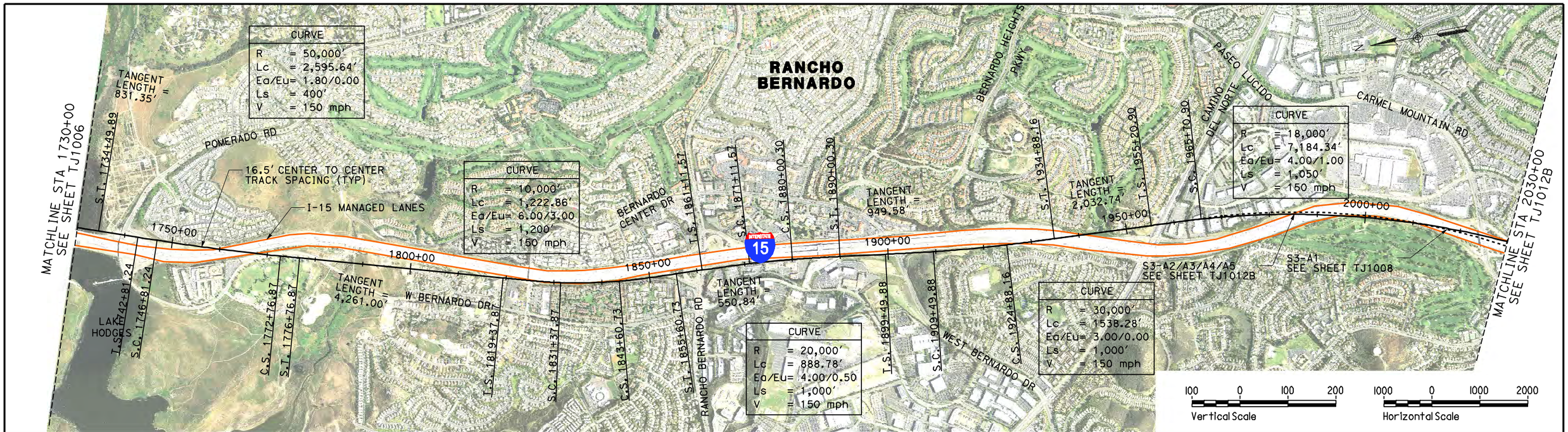
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

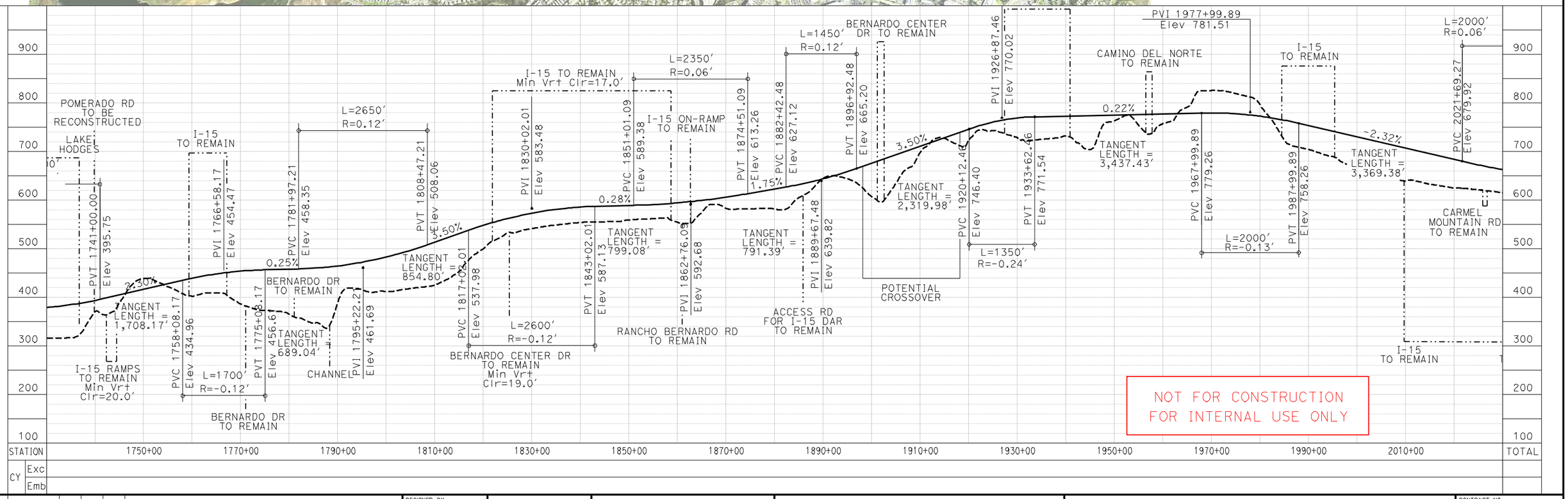
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-B1.2/B1.3: Escondido Centre City Pkwy
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1006A
SCALE As Shown
SHEET NO. 14

IP_PWP:dms04598\LD-TJ-1006A-S313.dgn 10:22 15-FEB-2011 cswanson





REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. Weber
DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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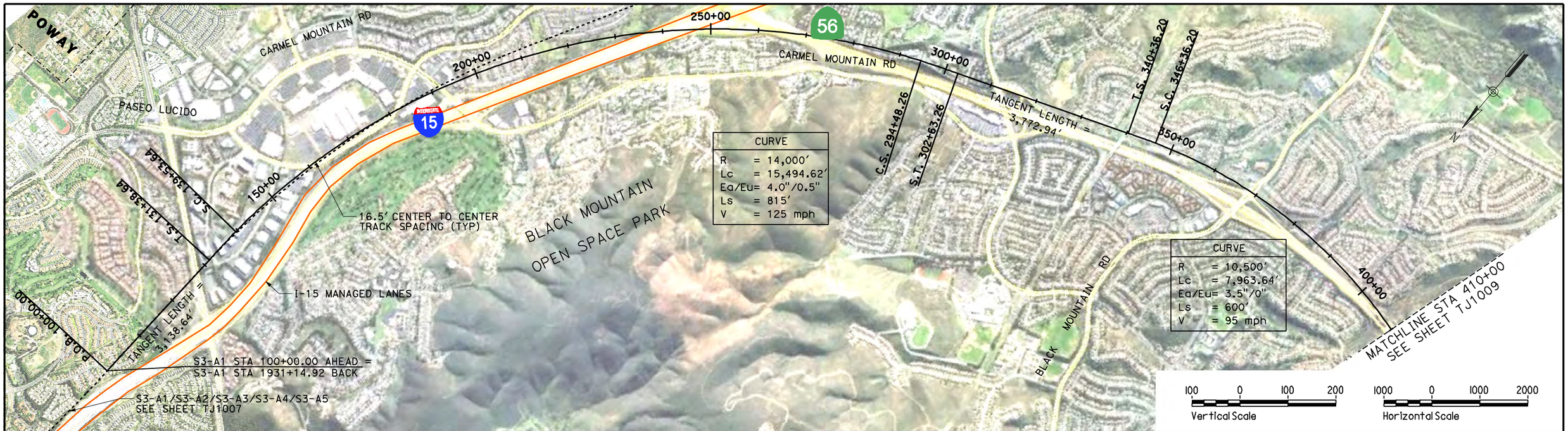
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2/A3/A4/A5: M/T to SDIA
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1007
SCALE As Shown
SHEET NO. 15

IP_PWPtdms04598\LD-TJ-1007-S313.dgn 10:23 15-FEB-2011 caswanson



CURVE	
R	= 14,000'
Lc	= 15,494.62'
Ea/Eu	= 4.0"/0.5"
Ls	= 815'
V	= 125 mph

CURVE	
R	= 10,500'
Lc	= 7,963.64'
Ea/Eu	= 3.5"/0"
Ls	= 600'
V	= 95 mph

ELEV

NO PROFILE/DTM AVAILABLE

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STATION	120+00	140+00	160+00	180+00	200+00	220+00	240+00	260+00	280+00	300+00	320+00	340+00	360+00	380+00	TOTAL
CY Exc															
CY Emb															

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1: M/T to SDIA via SR-56 & LOSSAN Corridor
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1008
SCALE As Shown
SHEET NO. 16

IP_PWP:dms04598\LD-TJ-1008-S314.dgn 10:24 15-FEB-2011 cswanson

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

ELEV

NO PROFILE/DTM AVAILABLE

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STATION	430+00	450+00	470+00	490+00	510+00	530+00	550+00	570+00	590+00	610+00	630+00	650+00	670+00	690+00	TOTAL
CY Exc															
CY Emb															

REV	DATE	BY	CHK	APP	DESCRIPTION

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IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1: M/T to SDIA via SR-56 & LOSSAN Corridor
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1009
SCALE As Shown
SHEET NO. 17

IP_PWI:dms04598\LD-TJ-1009-S314.dgn 10:25 15-FEB-2011 cswanson

ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
ELEV	ELEV
STATION	TOTAL
CY Exc	
CY Emb	

NO PROFILE/DTM AVAILABLE

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690+00 710+00 730+00 750+00 770+00 790+00 810+00 830+00 850+00 870+00 890+00 910+00 930+00

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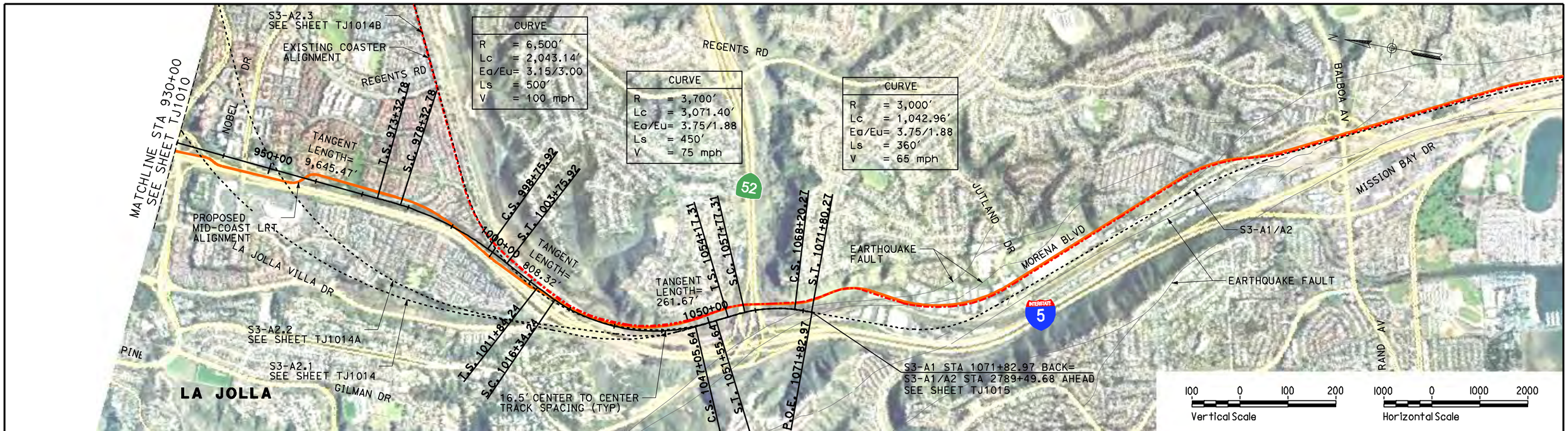
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

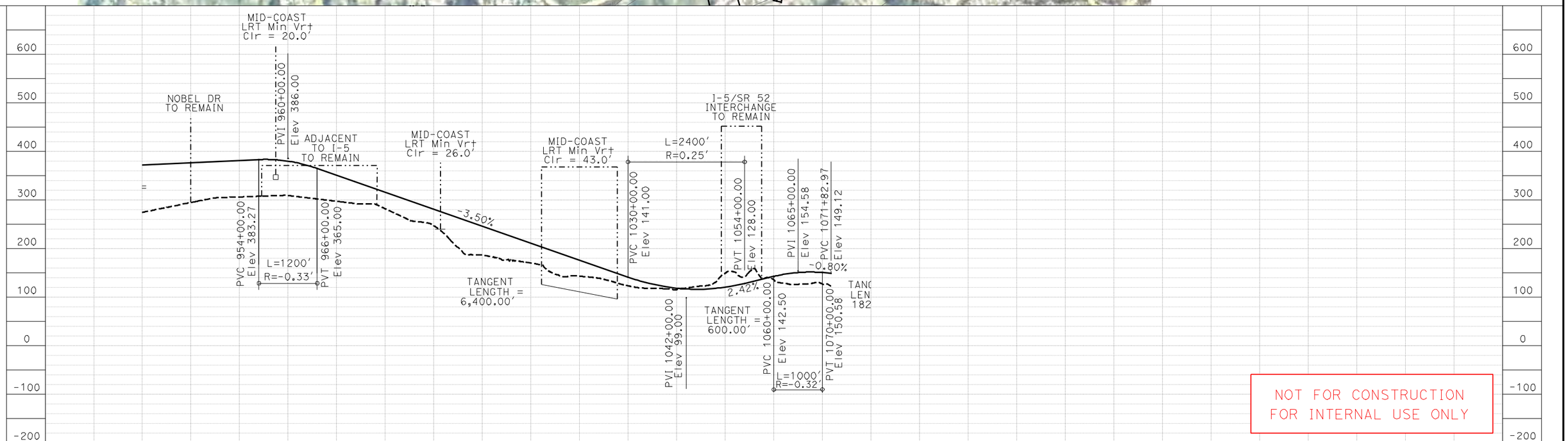
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1: M/T to SDIA via SR-56 & LOSSAN Corridor
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1010
SCALE As Shown
SHEET NO. 18

IP_PWP:dms04598\LD-TJ-1010-S314.dgn 10:26 15-FEB-2011 cswanson





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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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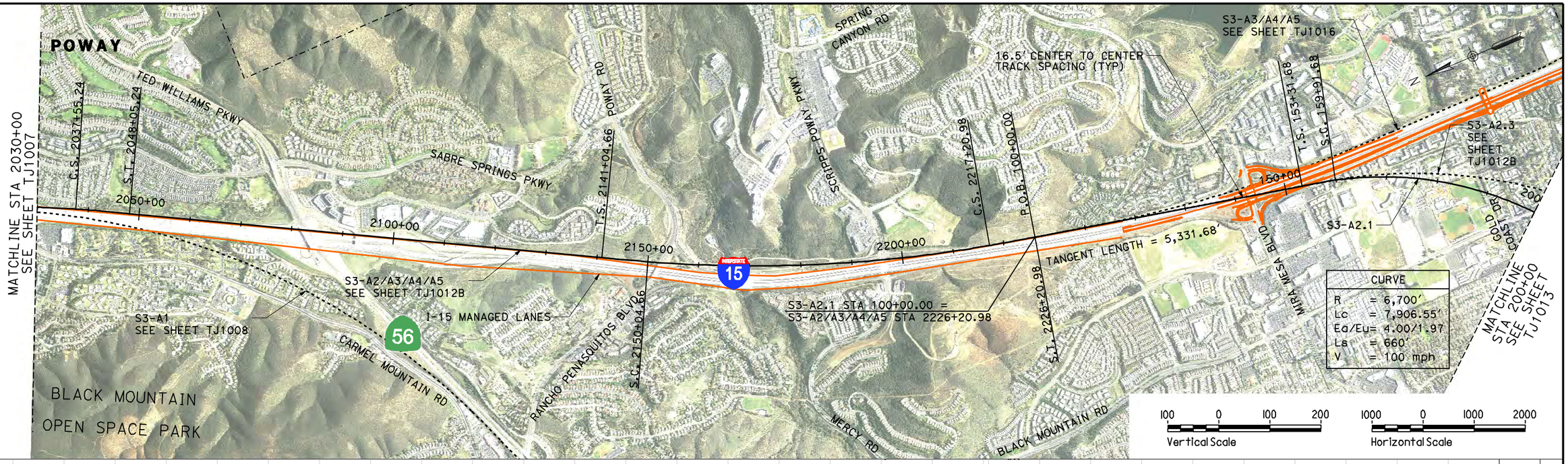
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

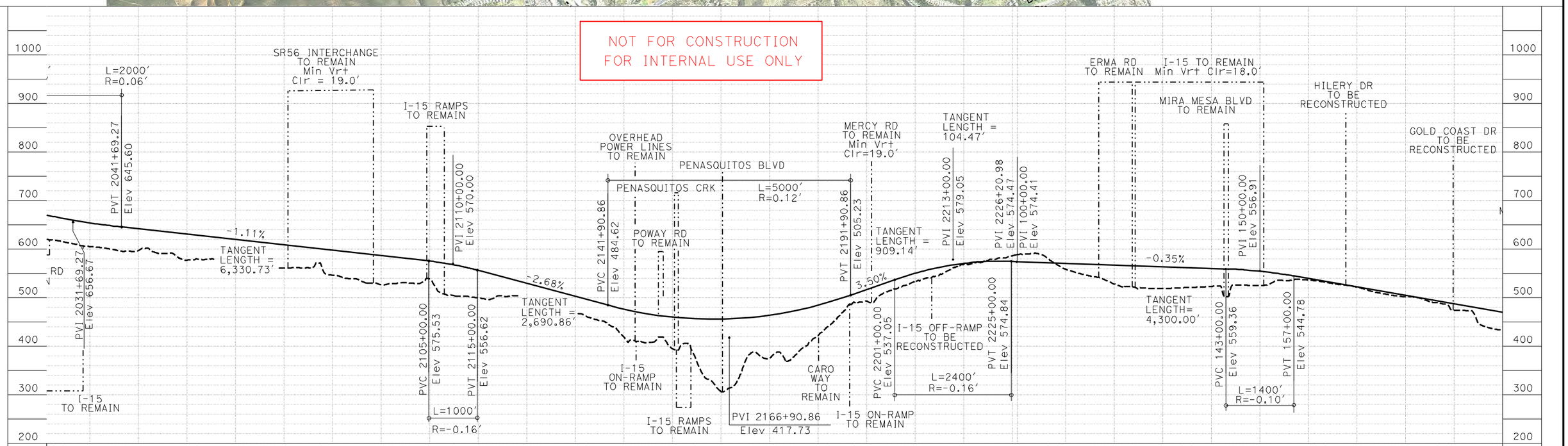
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1: M/T to SDIA via SR-56 & LOSSAN Corridor
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1011
SCALE As Shown
SHEET NO. 19

IP_PWP:dms04598\LD-TJ-1011-S314.dgn 15-FEB-2011 10:26 caswanson





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DESIGNED BY M. Weber
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IN CHARGE M. Zdon
DATE 3-3-2011

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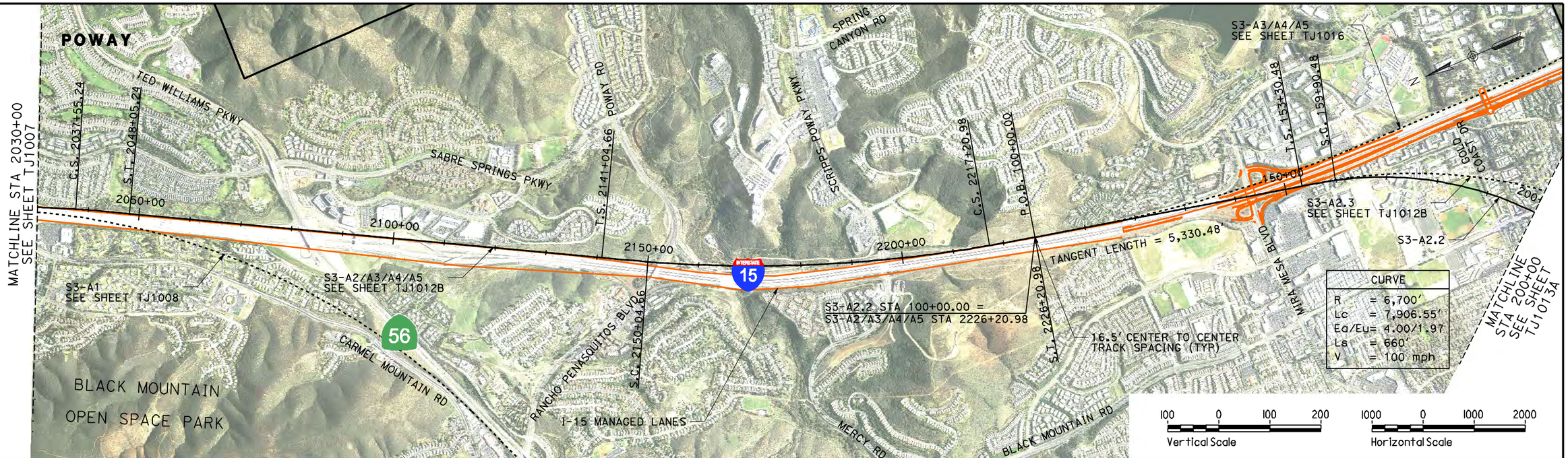
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

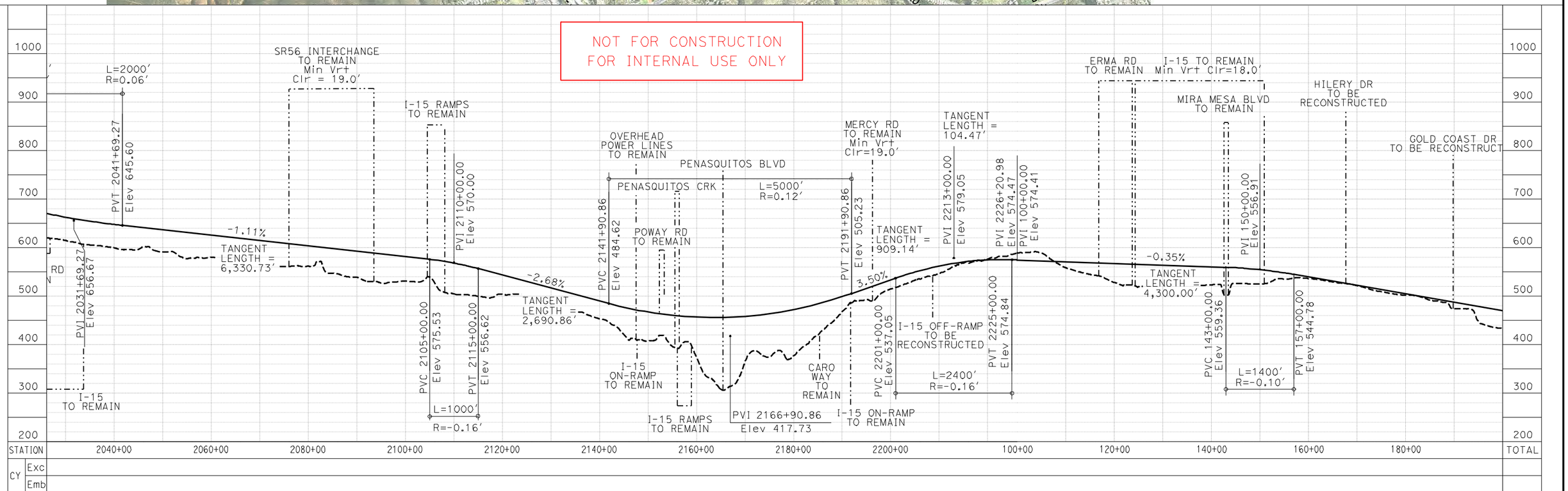
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.1: M/T to SDIA via I-15 Carroll Canyon
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1012
SCALE As Shown
SHEET NO. 20

IP_PWP:dms04598\LD-TJ-1012-S313.dgn 10:26 15-FEB-2011 cswanson





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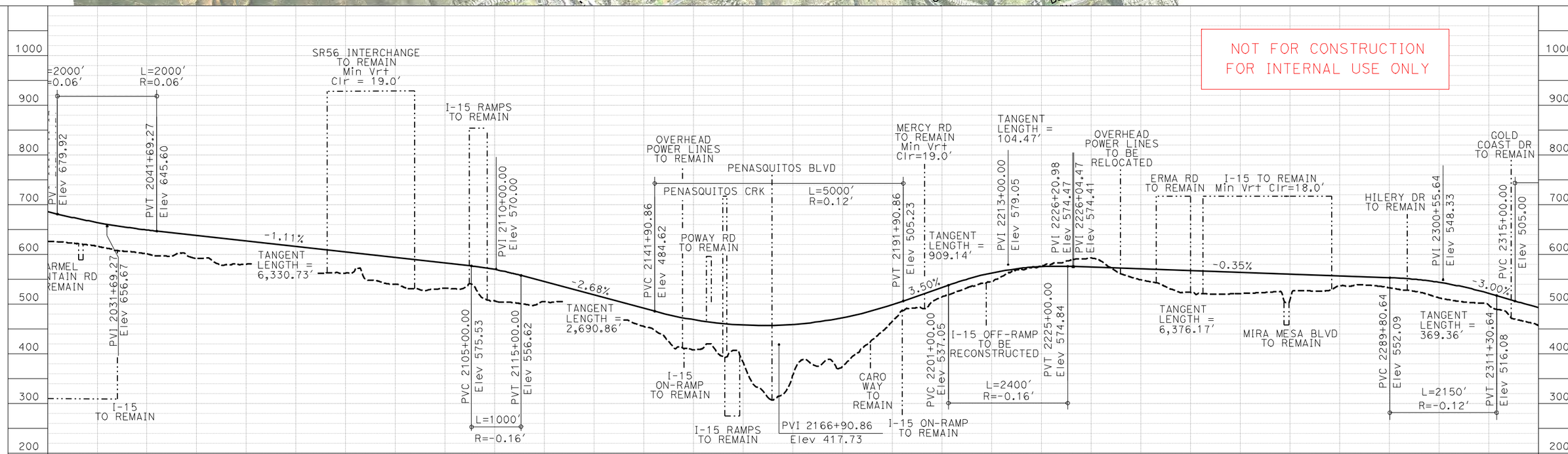
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.2: M/T to SDIA via I-15 UTC North
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1012A
SCALE As Shown
SHEET NO. 21

IP_PWP:dms04598\LD-TJ-1012A-S313.dgn 10:29 15-FEB-2011 cswanson



REV	DATE	BY	CHK	APP	DESCRIPTION

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DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2/A3/A4/A5: M/T to SDIA
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1012B
SCALE As Shown
SHEET NO. 22

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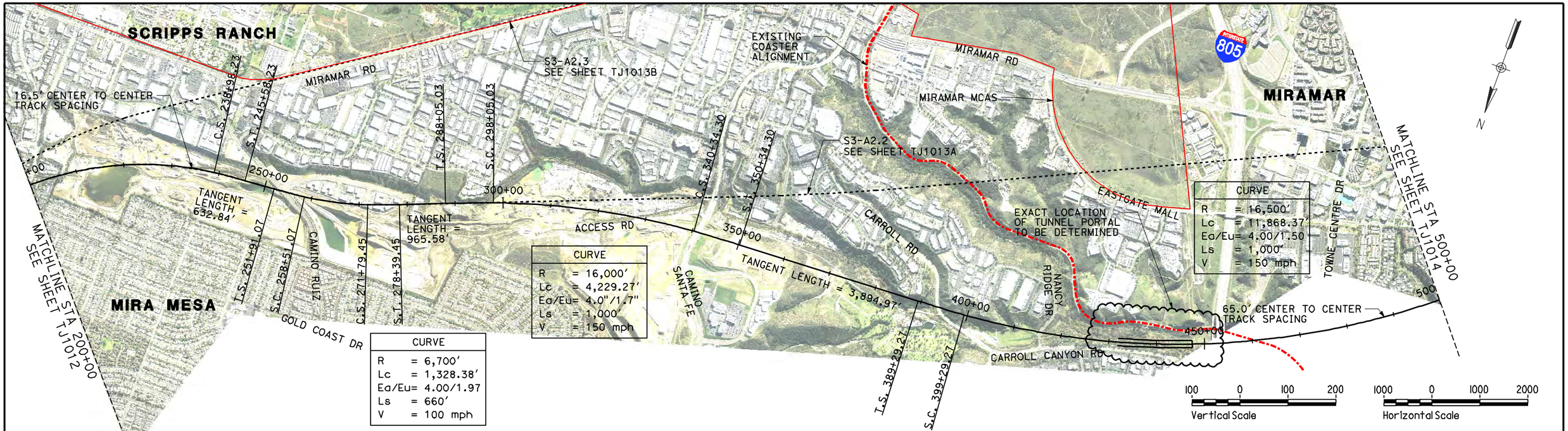

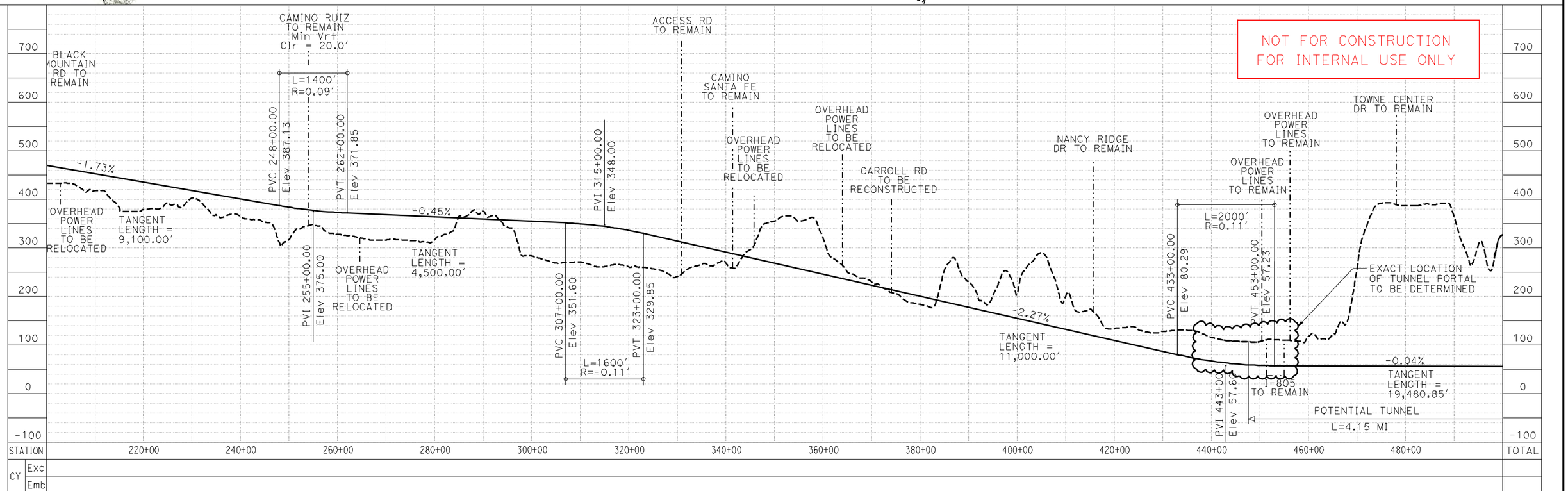

REV	DATE	BY	CHK	APP	DESCRIPTION

DESIGNED BY M. Weber
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IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.1: M/T to SDIA via I-15 Carroll Canyon
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1013
SCALE As Shown
SHEET NO. 23

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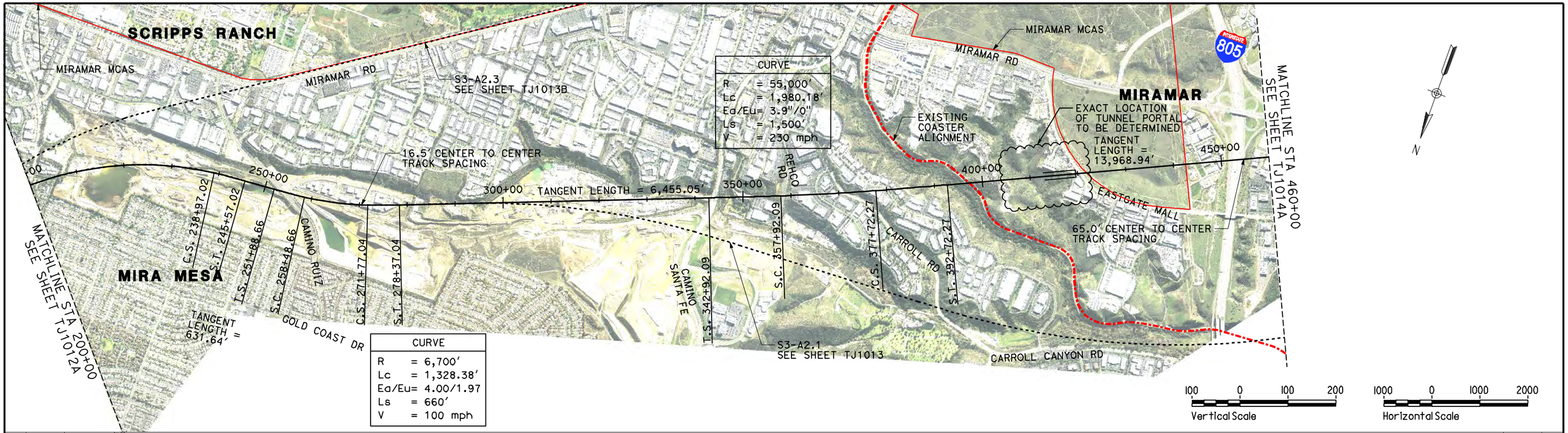

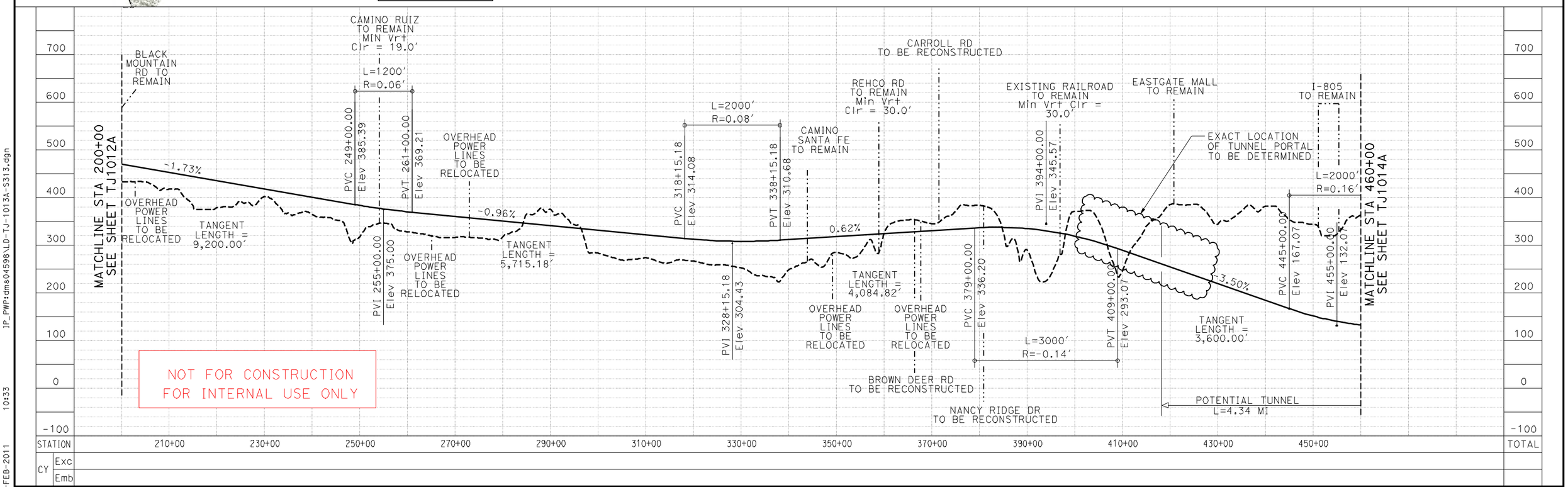

REV	DATE	BY	CHK	APP	DESCRIPTION

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DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.2: M/T to SDIA via I-15 UTC North
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1013A
SCALE As Shown
SHEET NO. 24

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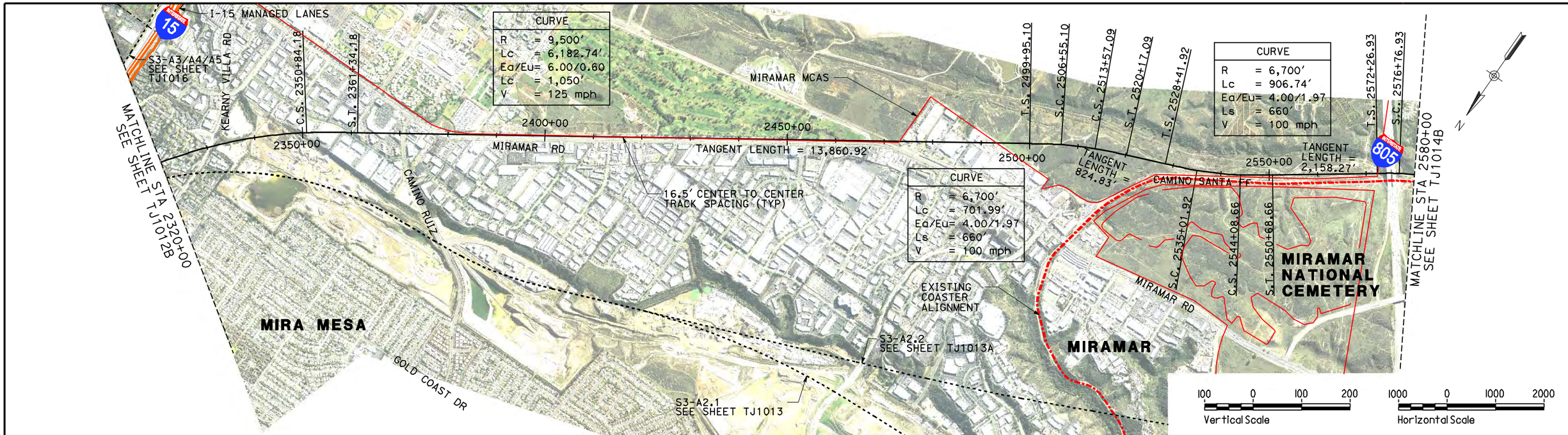

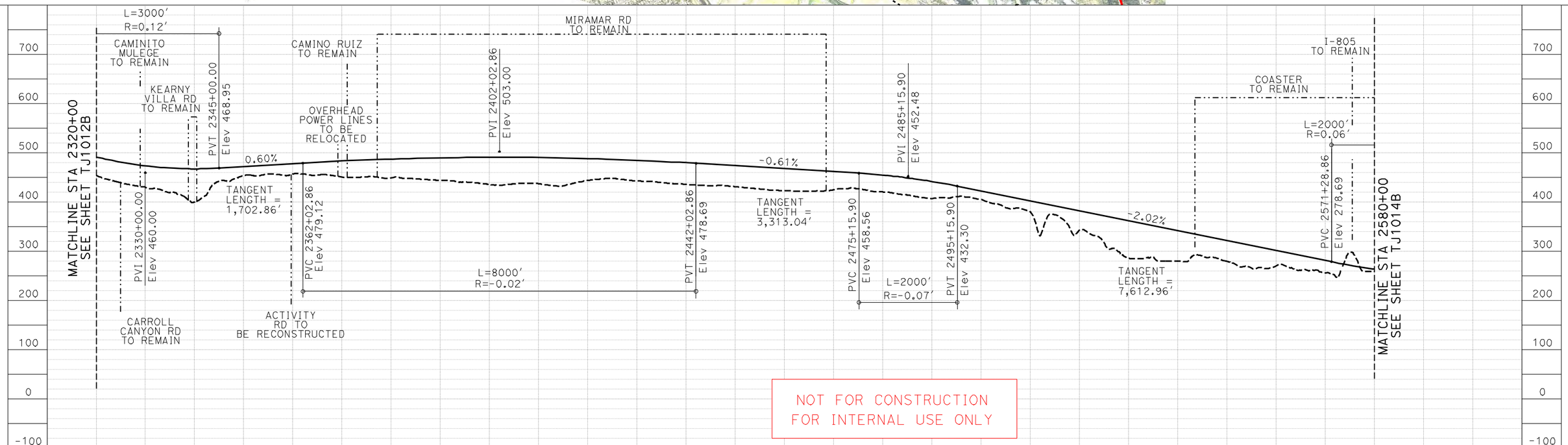

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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.3: M/T to SDIA via I-5 to Rose Canyon
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1013B
SCALE As Shown
SHEET NO. 25

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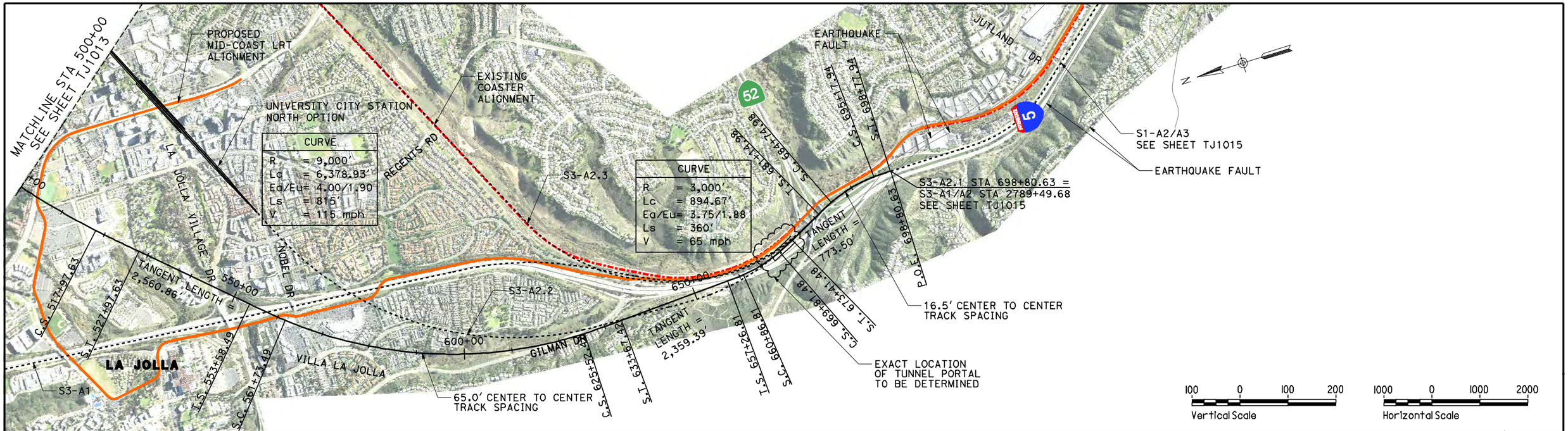

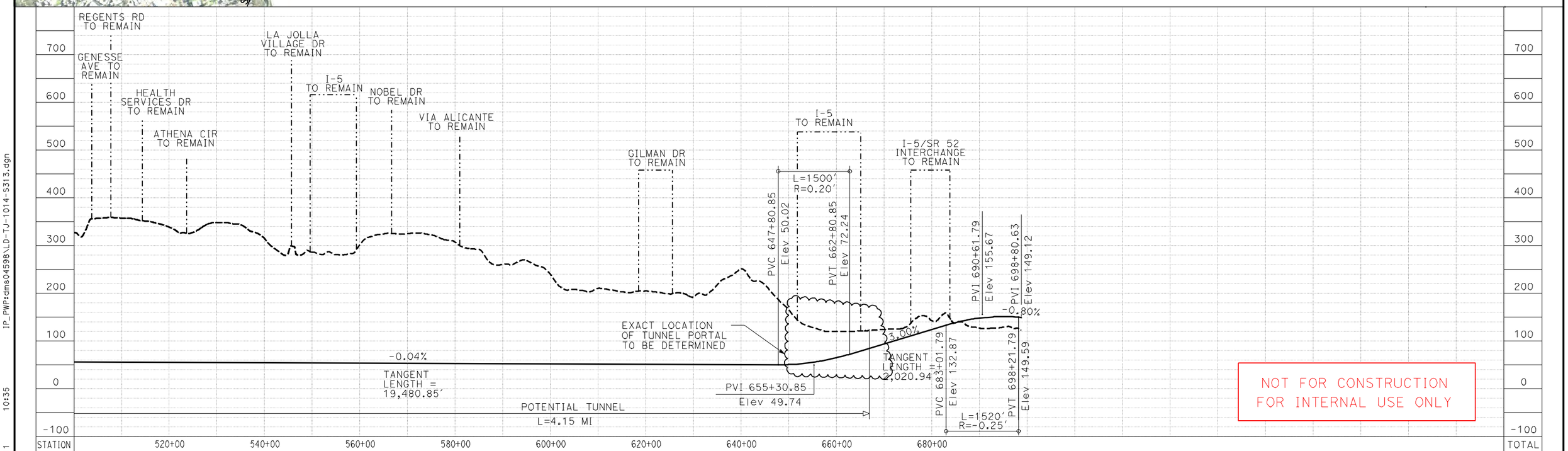

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REV	DATE	BY	CHK	APP	DESCRIPTION

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DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.1: M/T to SDIA via I-15 Carroll Canyon
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1014
SCALE As Shown
SHEET NO. 26

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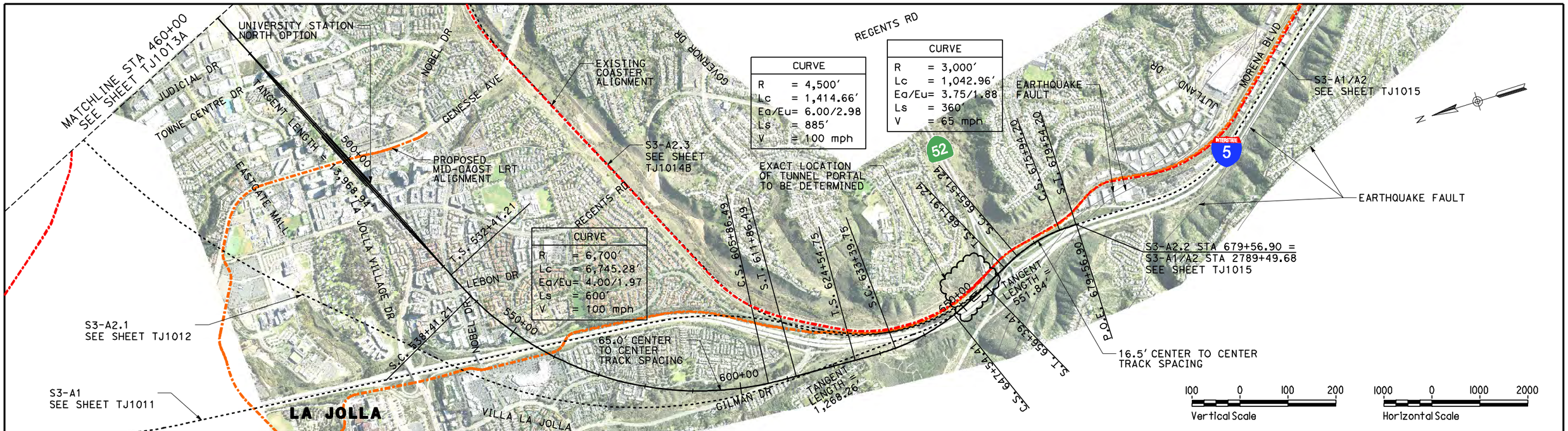

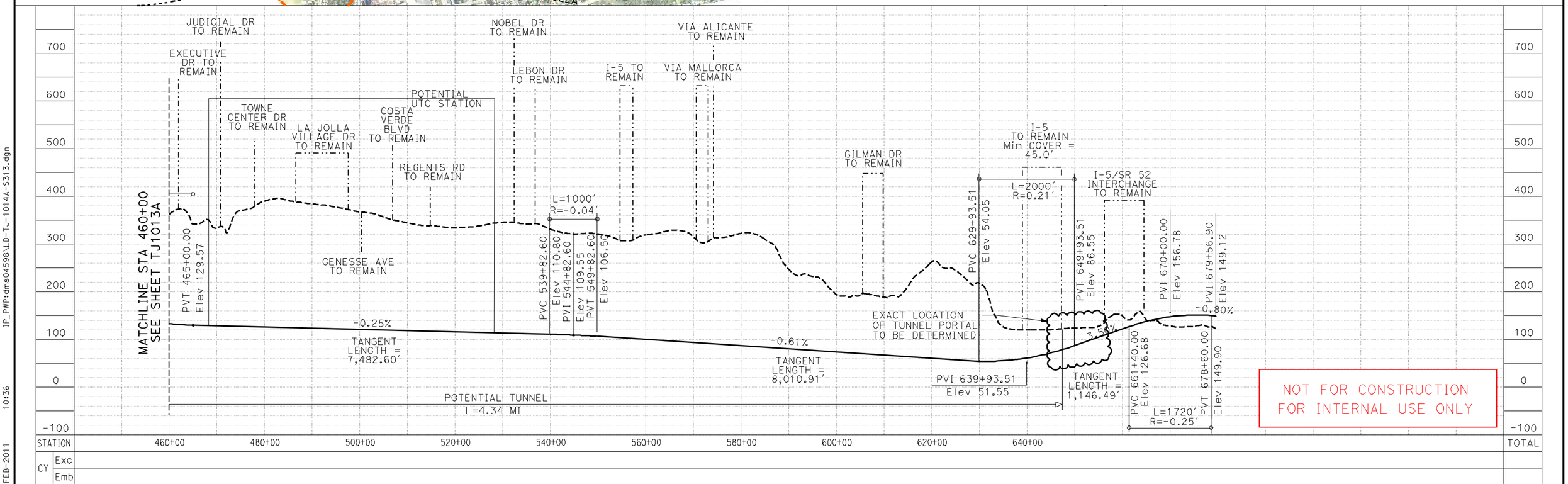

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DATE 3-3-2011

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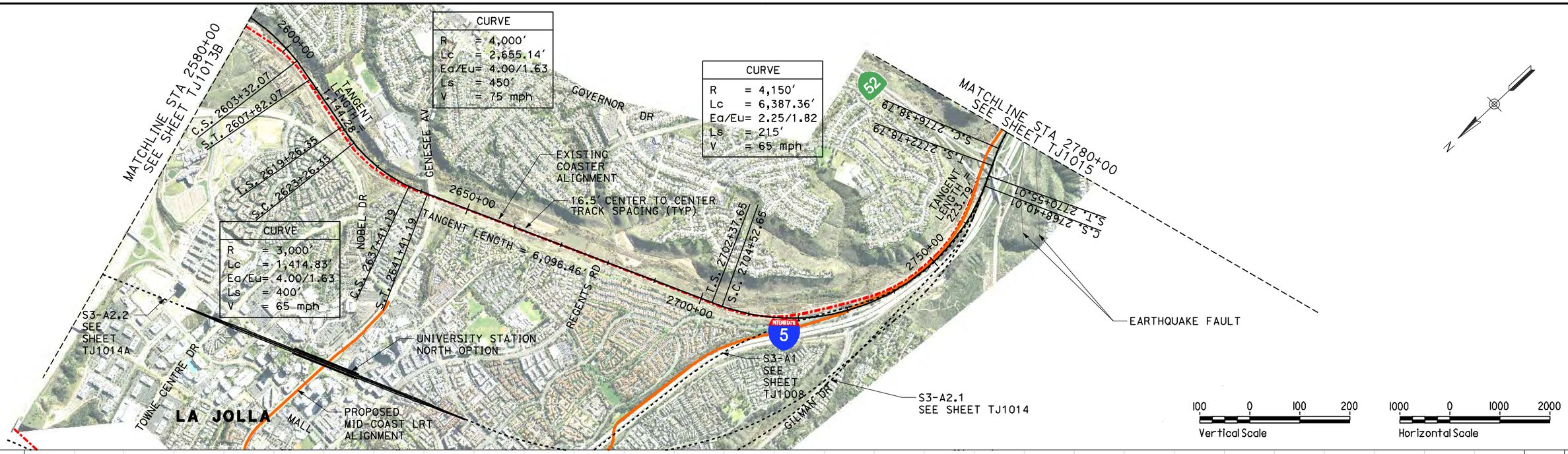
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

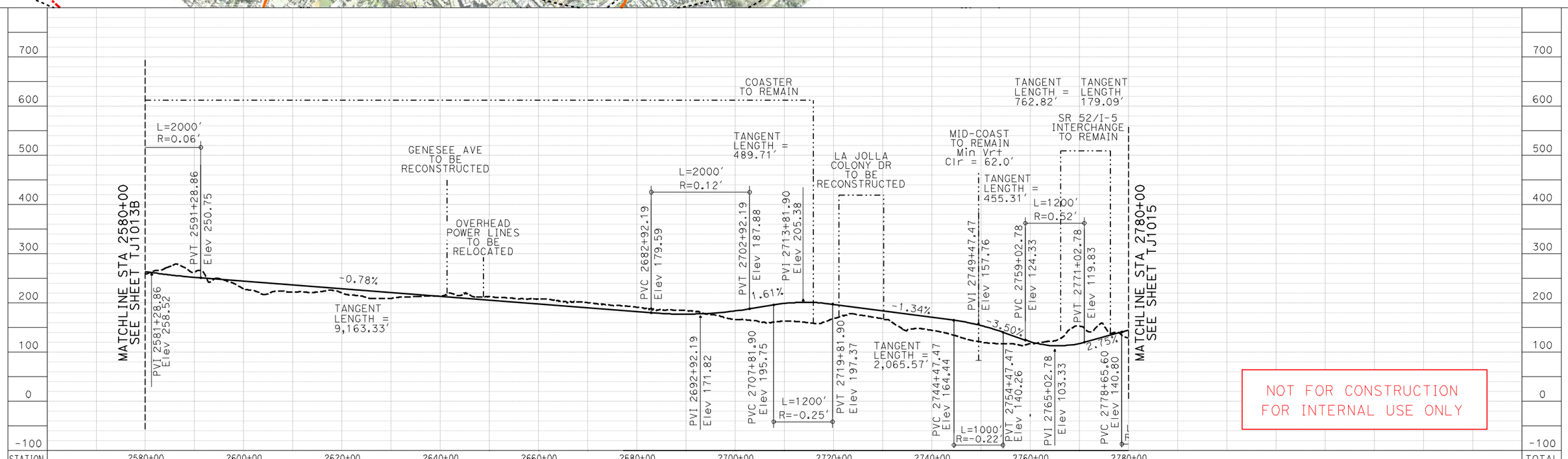
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.2: M/T to SDIA via I-15 UTC North
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1014A
SCALE As Shown
SHEET NO. 27

JP_PWP:dms04598\LD-TJ-1014A-S313.dgn 10:36 15-FEB-2011 cswanson





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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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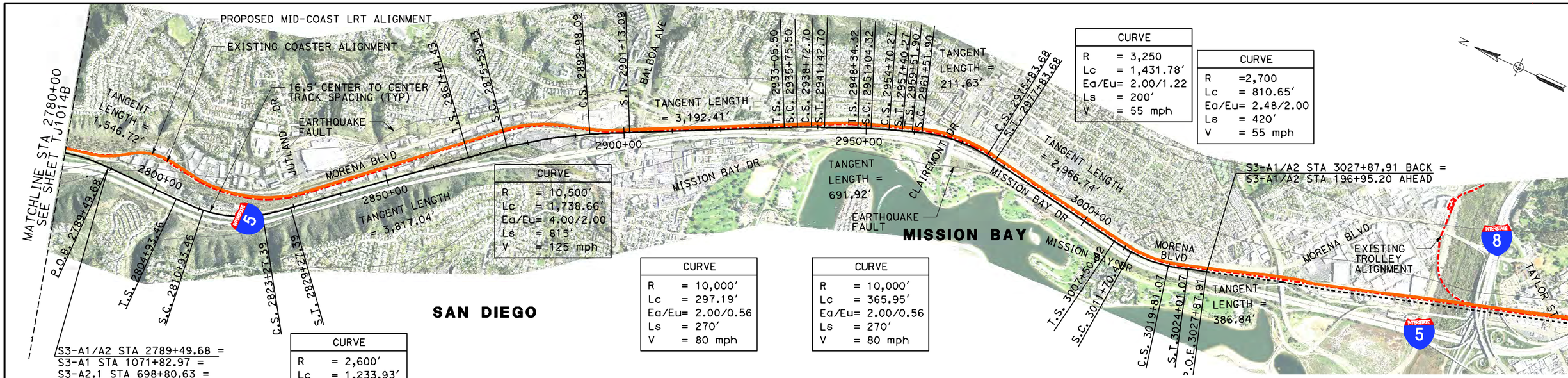
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

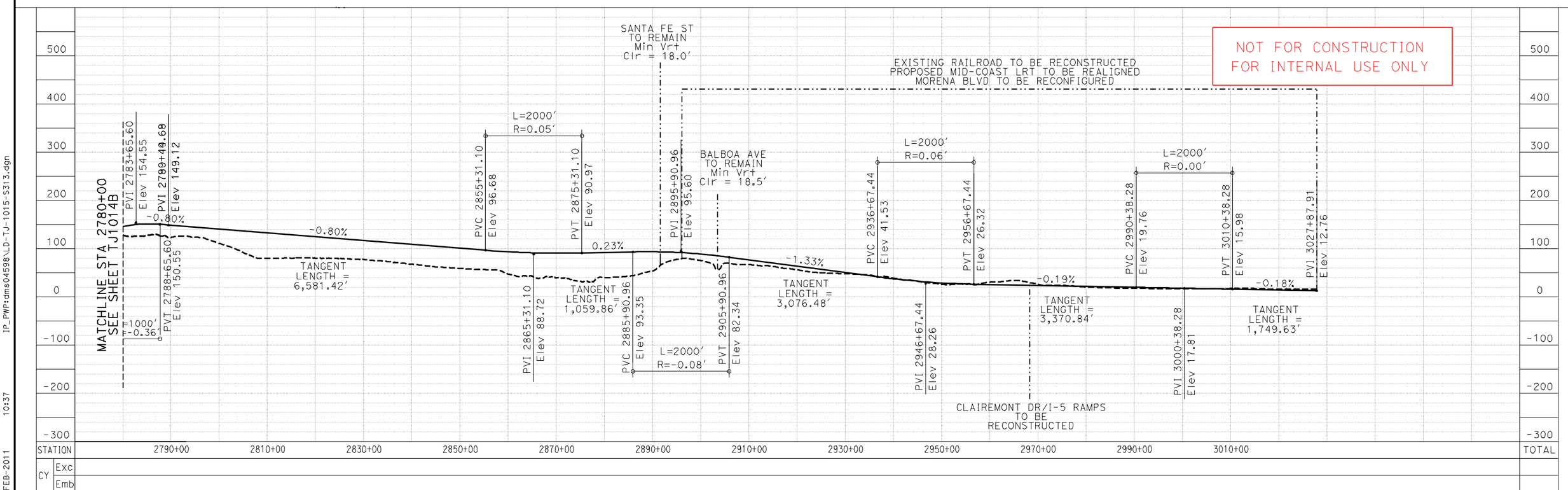
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A2.3: M/T to SDIA via I-5 to Rose Canyon
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1014B
SCALE As Shown
SHEET NO. 28

IP_PWP:dms04598\LD-TJ-1014B-S313.dgn 10:36 15-FEB-2011 cswanson





REV	DATE	BY	CHK	APP	DESCRIPTION

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DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2: M/T to SDIA via SR-56/I-15 to LOSSAN
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1015
SCALE As Shown
SHEET NO. 29

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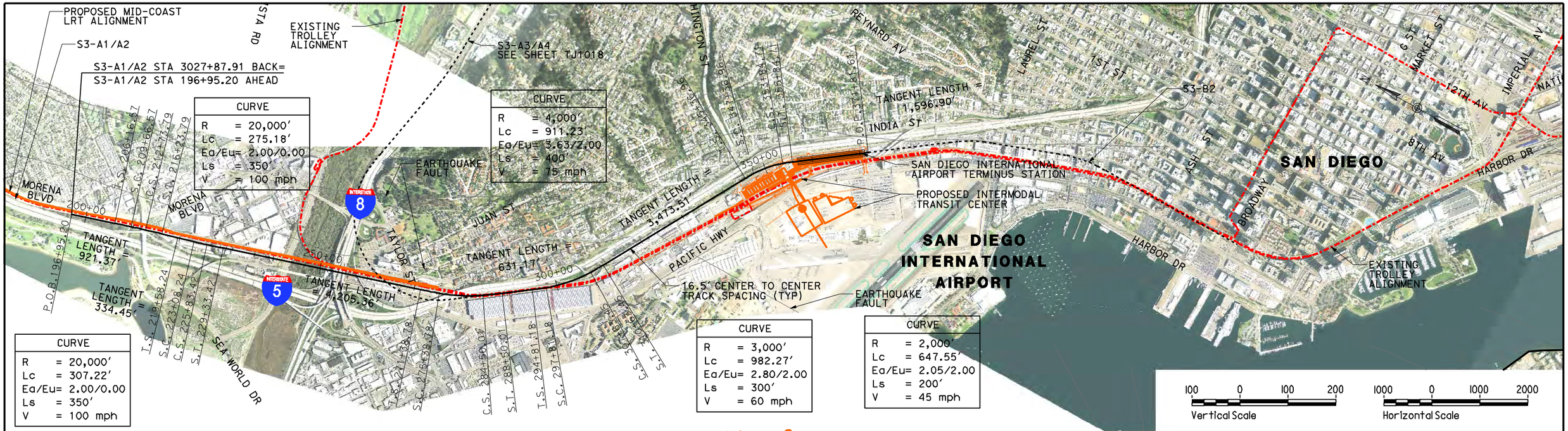
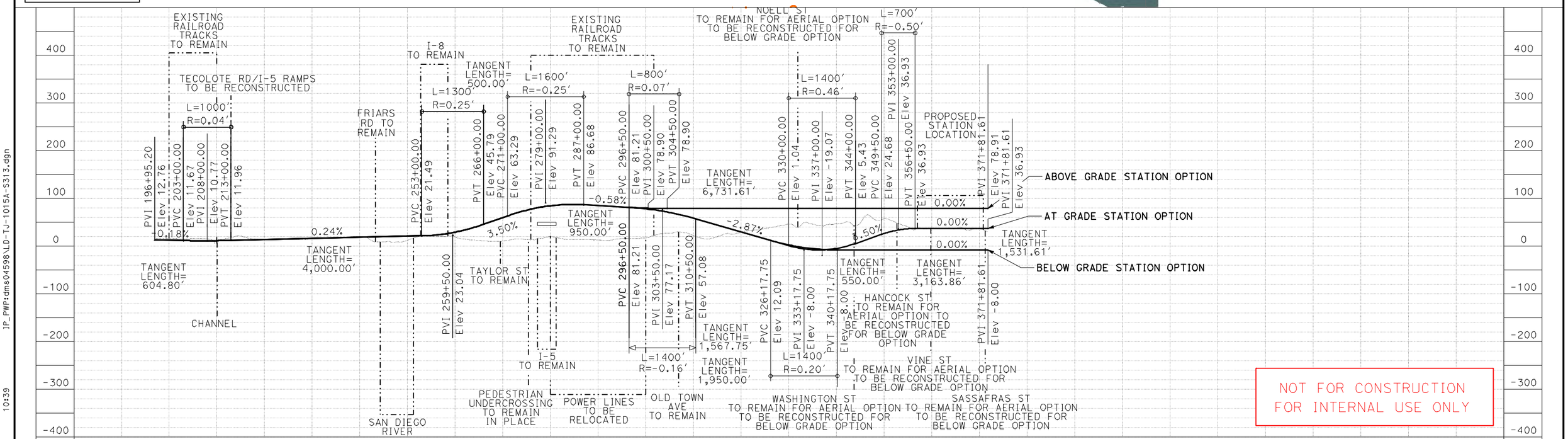
10:37
15-FEB-2011
cswanson





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DESIGNED BY M. Weber
DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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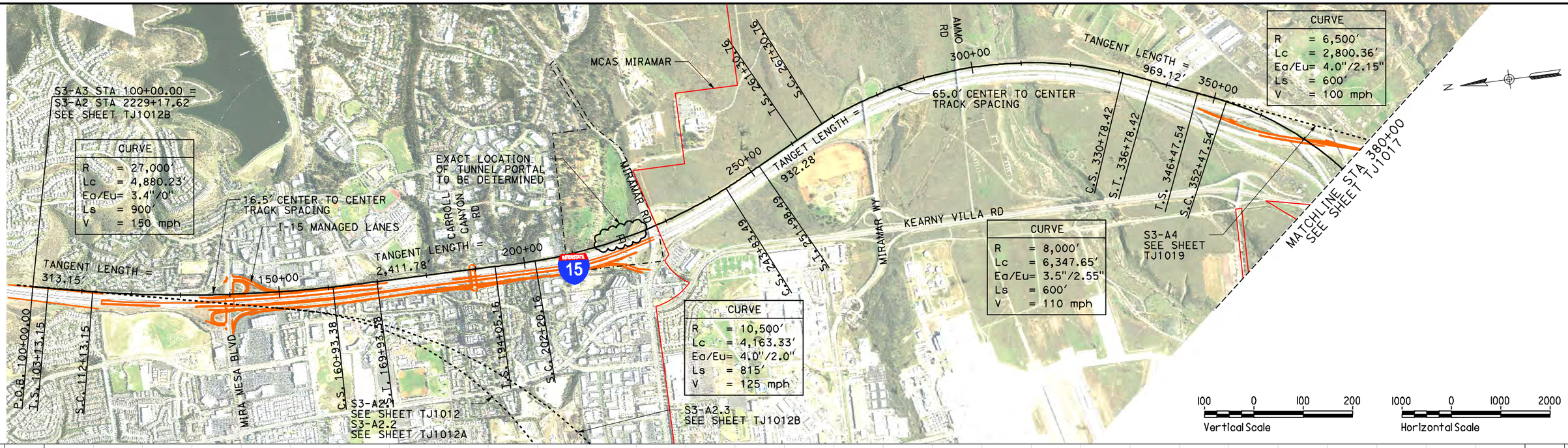
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

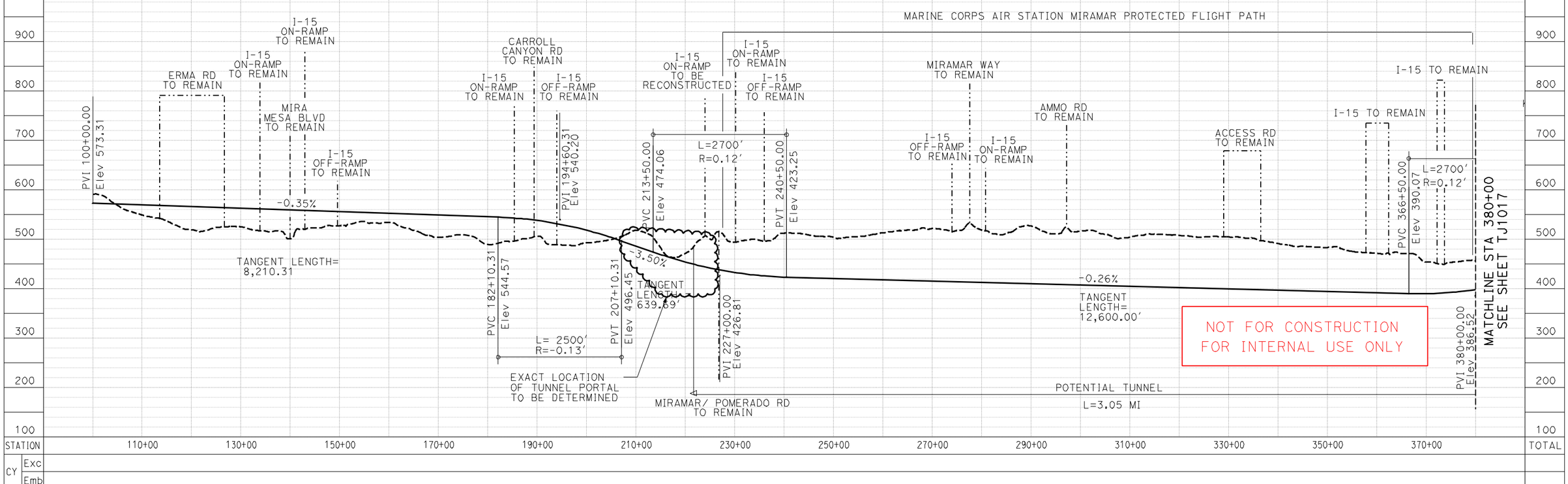
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A1/A2: M/T to SDIA via SR-56/I-15 to LOSSAN
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1015A
SCALE As Shown
SHEET NO. 30

JP_PWP:dms04598\LD-TJ-1015A-S313.dgn 10:39 15-FEB-2011 caswanson





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DESIGNED BY M. Weber
DRAWN BY C. Swanson
CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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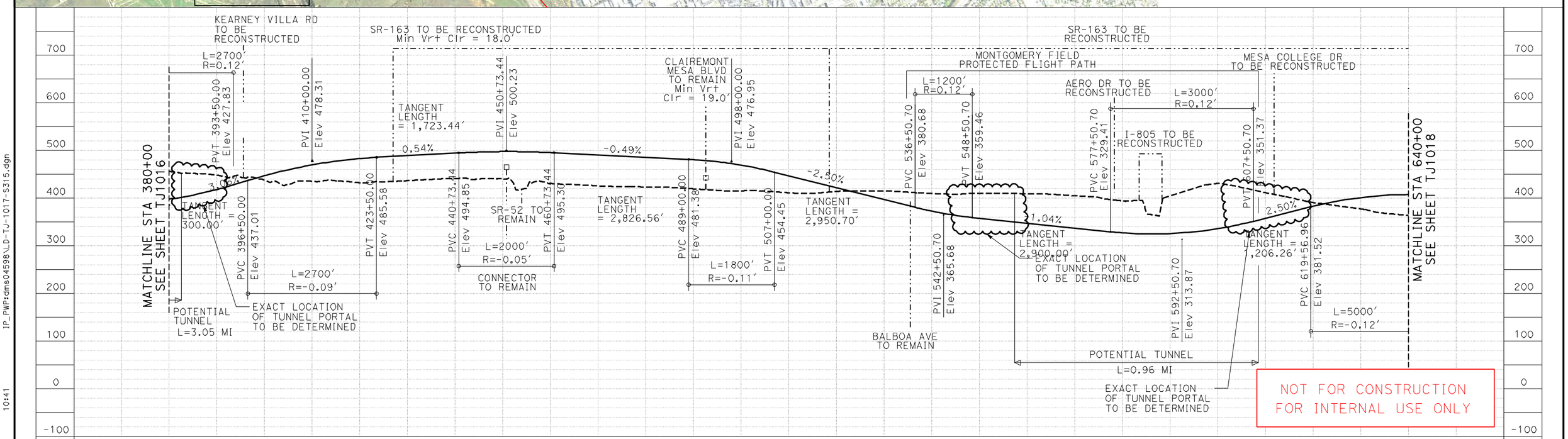
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A3: M/T to SDIA via SR-163 & I-8
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1016
SCALE As Shown
SHEET NO. 31

IP_PWP:dms04598\LD-TJ-1016-S315.dgn 10:40 15-FEB-2011 cswanson



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IN CHARGE M. Zdon
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A3: M/T to SDIA via SR-163 & I-8
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1017
SCALE As Shown
SHEET NO. 32

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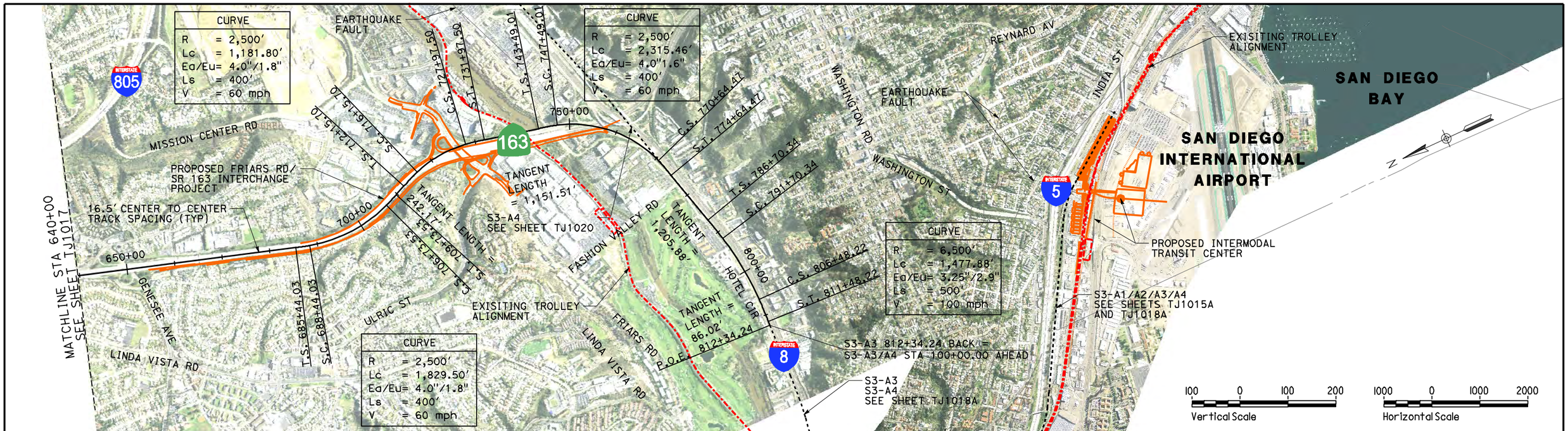

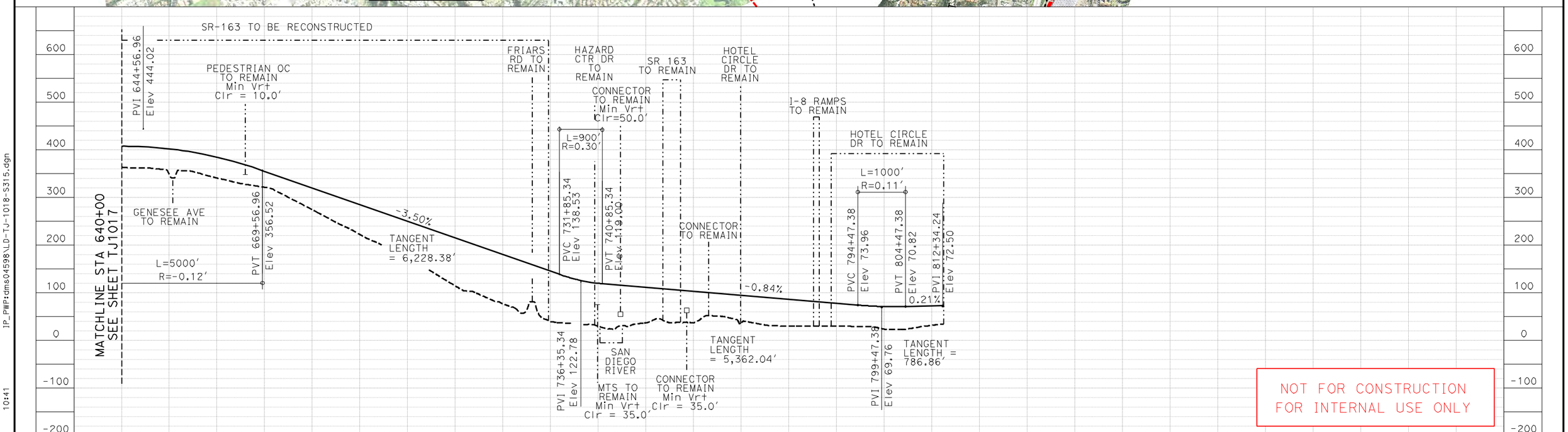

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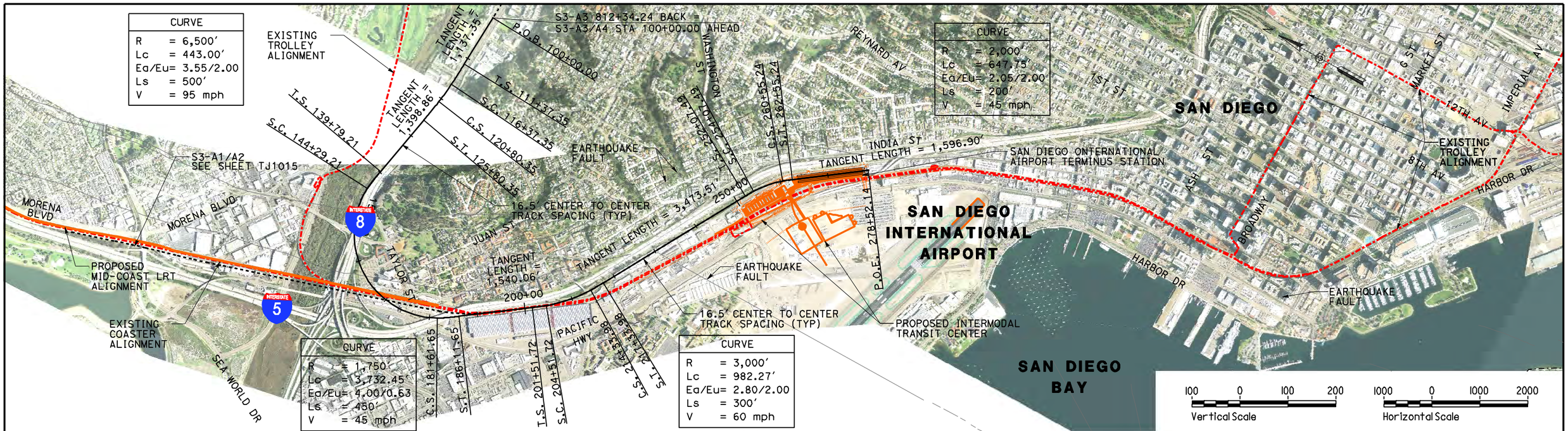
CALIFORNIA HIGH-SPEED RAIL AUTHORITY

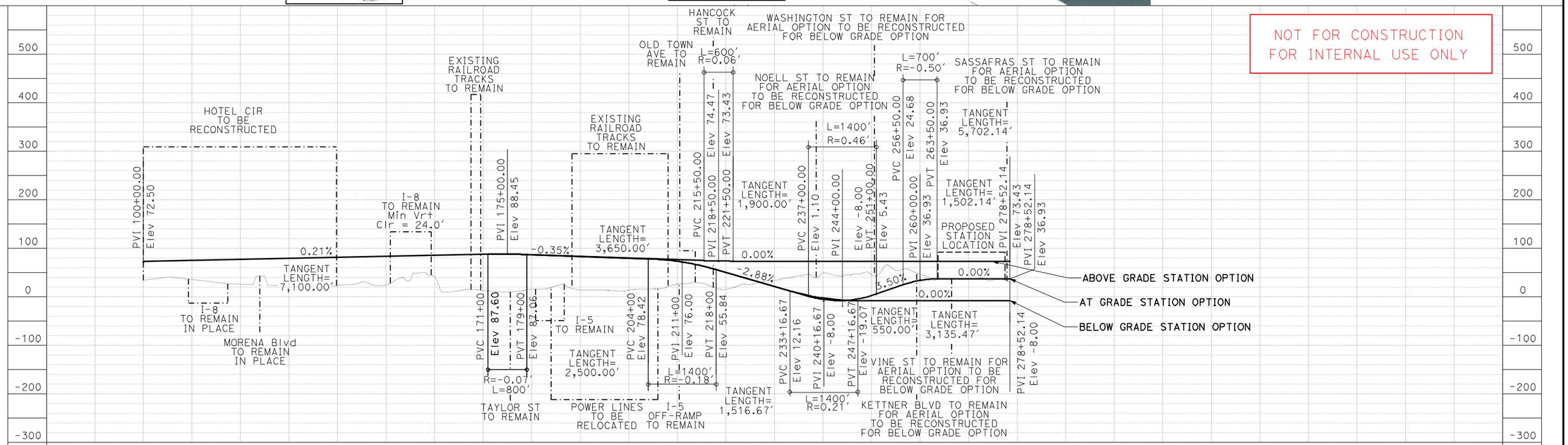
CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A3: M/T to SDIA via SR-163 & I-8
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1018
SCALE As Shown
SHEET NO. 33

IP_PWP:dms04598\LD-TJ-1018-S315.dgn 10:41 15-FEB-2011 caswanson





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IN CHARGE M. Zdon
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CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A3/A4: M/T to SDIA via SR-163 & I-8/I-15
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1018A
SCALE As Shown
SHEET NO. 34

15-FEB-2011 10:42 caswanson
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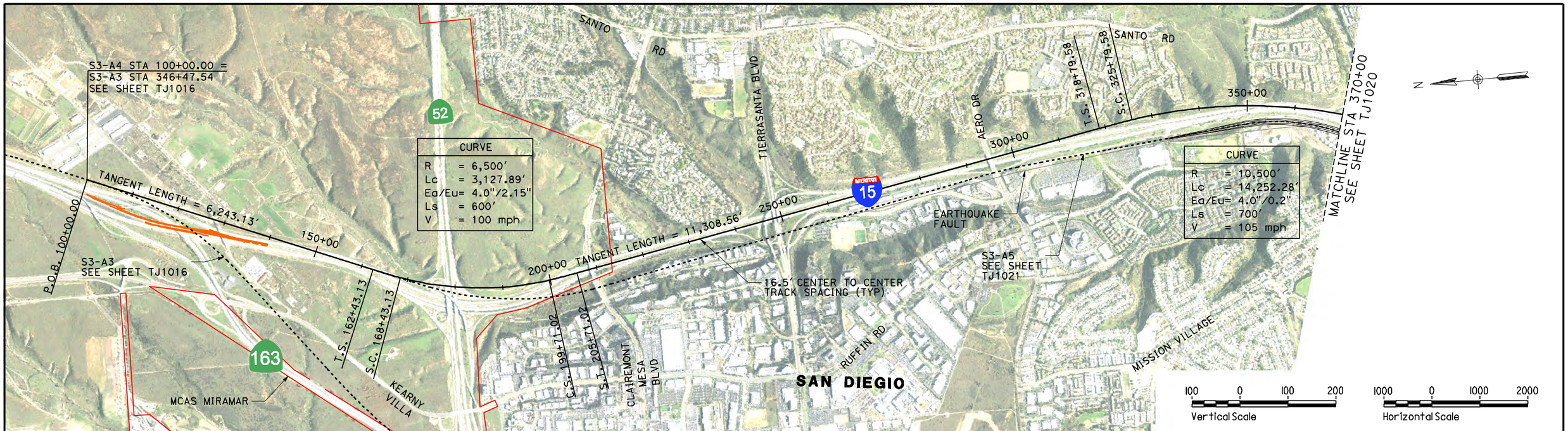

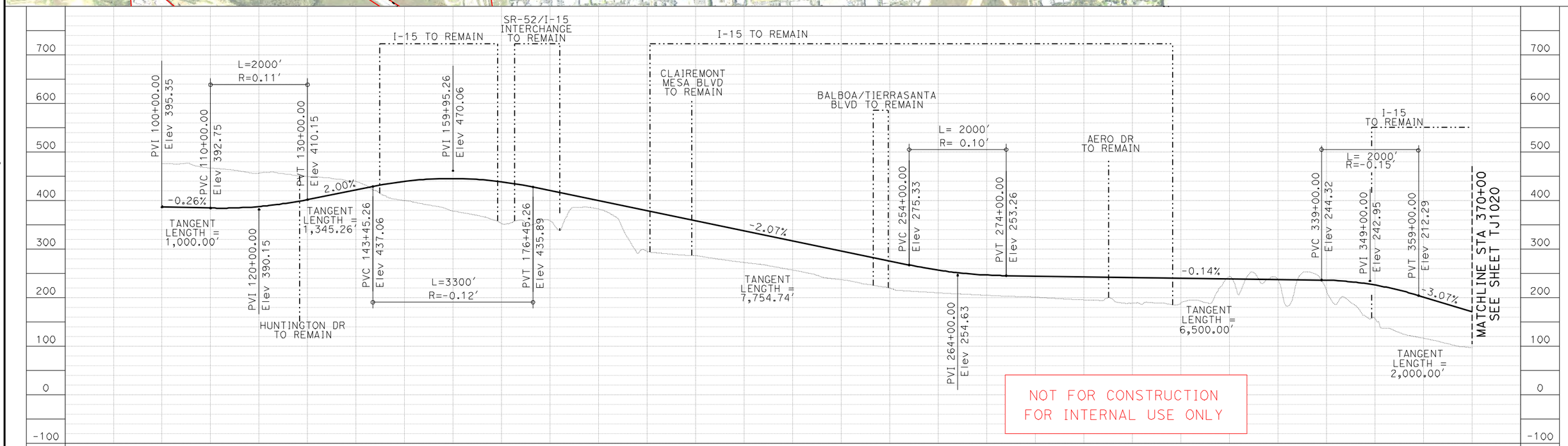

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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A4: M/T to SDIA via I-15 & I-8
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1019
SCALE As Shown
SHEET NO. 35

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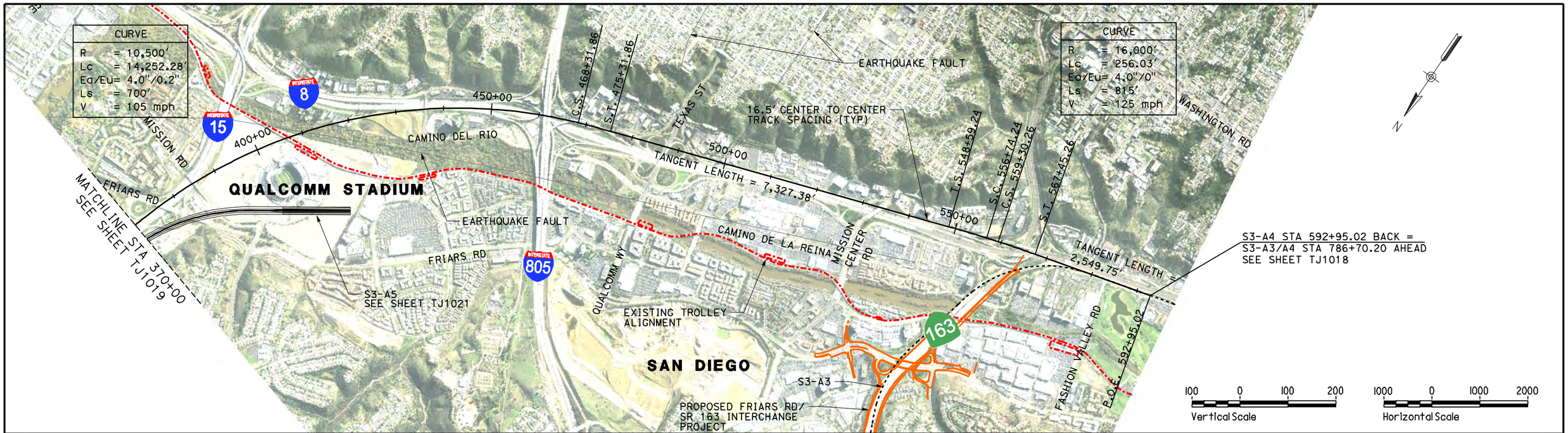

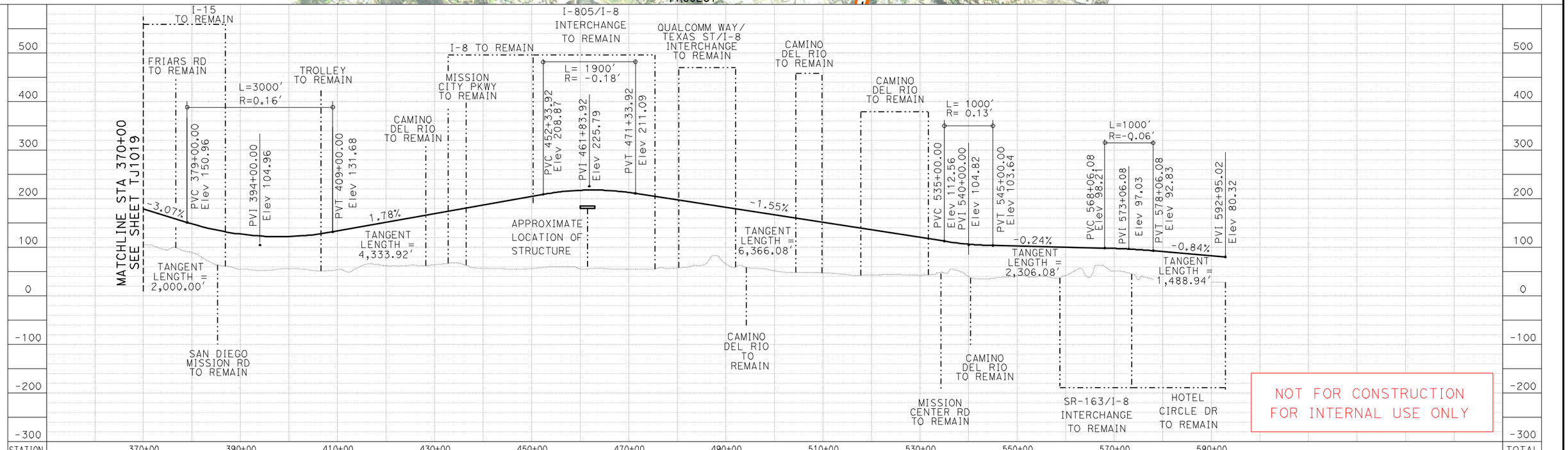

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DESIGNED BY M. Weber
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IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A4: M/T to SDIA via I-15 & I-8
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1020
SCALE As Shown
SHEET NO. 36

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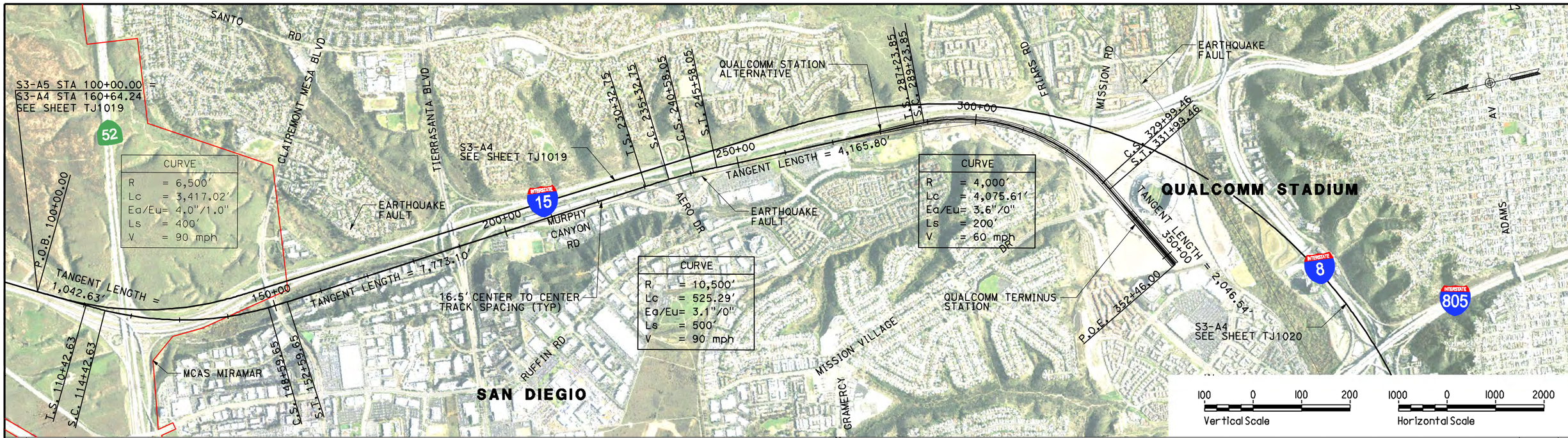

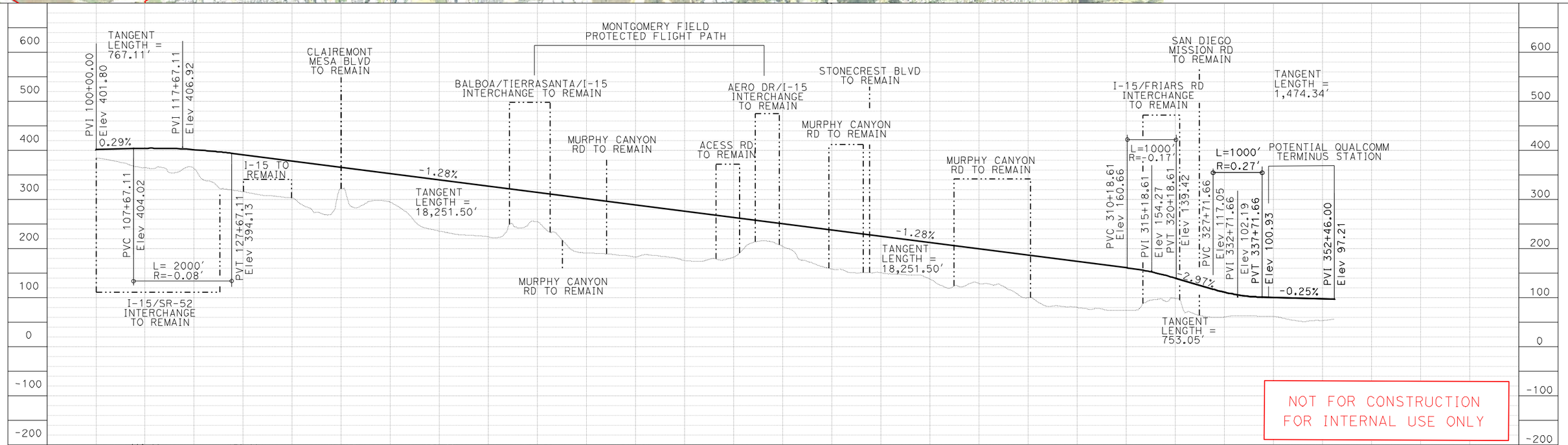

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CHECKED BY R. Simon
IN CHARGE M. Zdon
DATE 3-3-2011

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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-A5: M/T to Qualcomm Terminus via I-15
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1021
SCALE As Shown
SHEET NO. 37

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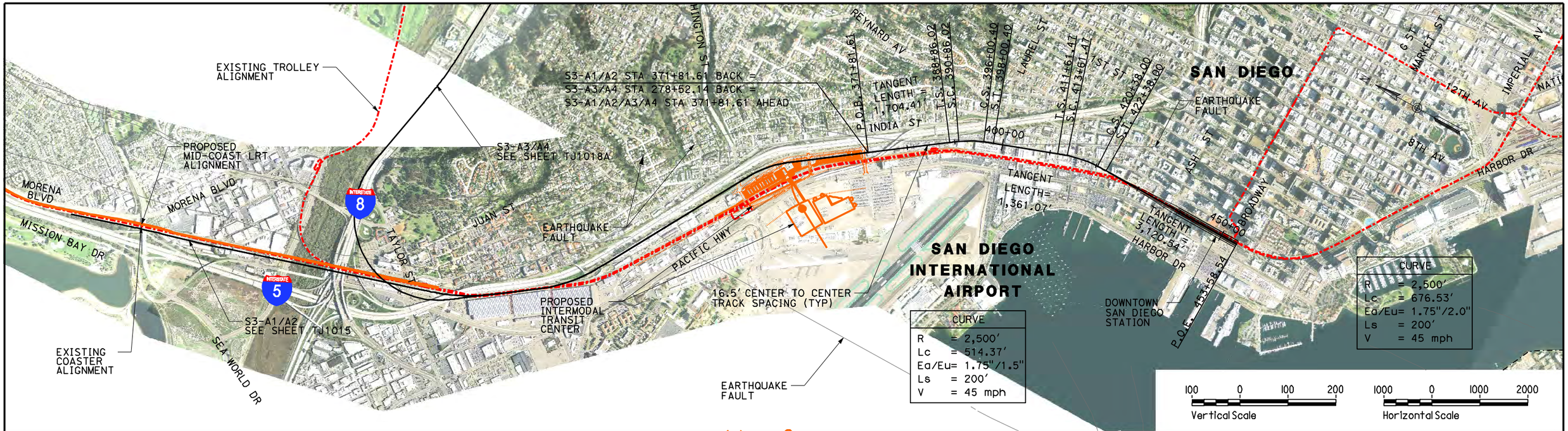

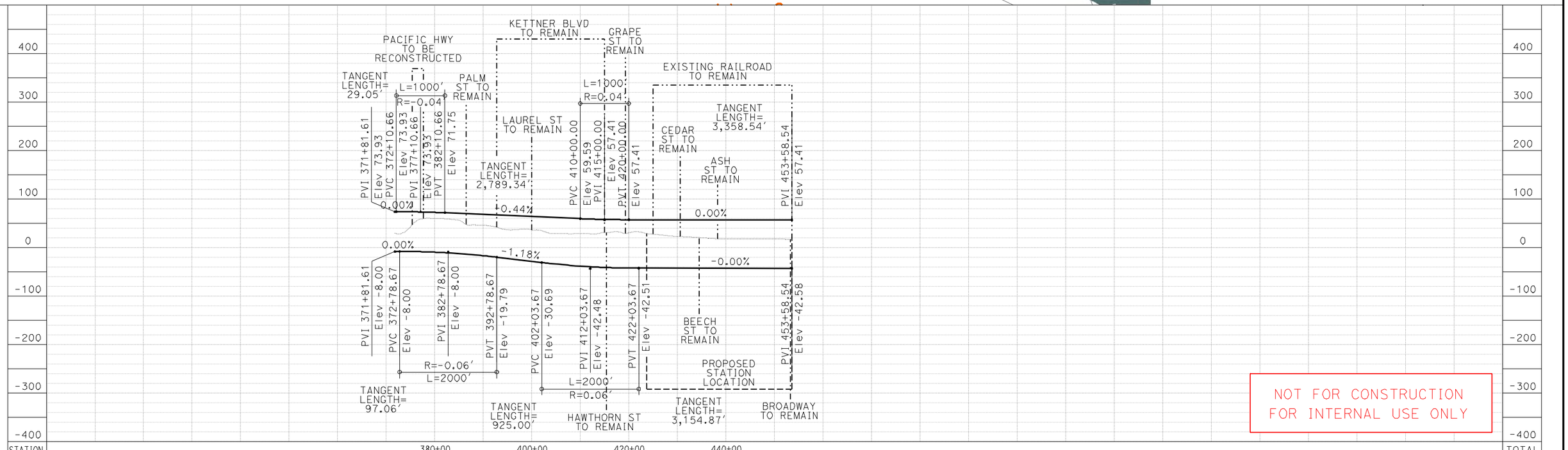

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CHECKED BY R. Simon
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CALIFORNIA HIGH-SPEED RAIL AUTHORITY

CALIFORNIA HIGH-SPEED TRAIN PROJECT
LOS ANGELES TO SAN DIEGO SECTION

Subsection 3-Murrieta/Temecula to San Diego
S3-B2: Downtown Santa Fe Depot Station Option
Plan and Profile

CONTRACT NO.
DRAWING NO. TJ1022
SCALE As Shown
SHEET NO. 38

IP_PWP:ams04598\LD-TJ-1022-S313.dgn 10:44 15-FEB-2011 caswanson